



Database Manager

with Report Generator

COMMODORE 64

DATABASE MANAGER

USER'S MANUAL

for the Commodore 64



**MIRAGE
CONCEPTS**

INCORPORATED

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Rev. C, December 1983

PREFACE

PREFACE

The DATABASE MANAGER is a personal productivity tool that will help you organize and manage your information. As an aid for both business and personal needs, the DATABASE MANAGER is one of the most powerful tools available for the Commodore 64 computer.

The DATABASE MANAGER is easy-to-learn, and its versatility is enhanced by the skill of its user. As you become more familiar with this program, and better able to exercise its powers, you'll be surprised how quickly and efficiently various tasks can be accomplished.

This manual provides step-by-step instructions on how to make use of the full capabilities of the DATABASE MANAGER program. It is divided into four basic sections.

In the INTRODUCTION you will go through a short indoctrination on the structure of a database and some of its useful functions. The capabilities of the DATABASE MANAGER will then be reviewed, followed by a section which will better acquaint you with the Commodore 64 computer you'll be working with. The INTRODUCTION will close with some helpful hints for the successful operation of the program.

The next two sections of the User's Manual are the BEGINNING and ADVANCED TUTORIALS. There are five lessons in each division. Each lesson concentrates on explaining the correct usage of one program function. The best way to learn the proper usage of the DATABASE MANAGER is to read these TUTORIAL lessons while typing in, and manipulating the examples they prompt you to enter.

The REFERENCE section is a quick guide to program functions intended for the user who has completed both TUTORIAL sections. It is perfect for those times when you can't quite remember how to accomplish a certain task.

These four main User's Manual sections are followed by APPENDICES (including a GLOSSARY of words which may not be familiar to you) and an INDEX for quick reference.

If you have not already done so, please take a moment to complete and mail the WARRANTY registration envelope. With this program registered in your name, you will receive product update information, new product announcements, and tips on using MIRAGE CONCEPTS' software more efficiently.

We sincerely hope you enjoy working with your powerful new assistant: the DATABASE MANAGER from MIRAGE CONCEPTS!

Commodore International Historical Society

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INTRODUCTION

DATABASE STRUCTURE

Definitions

Data — Significant items of information.

Database — A large collection of Data.

Database Management System — Programs and Documentation for setting up and using a Database

How a Database is Organized

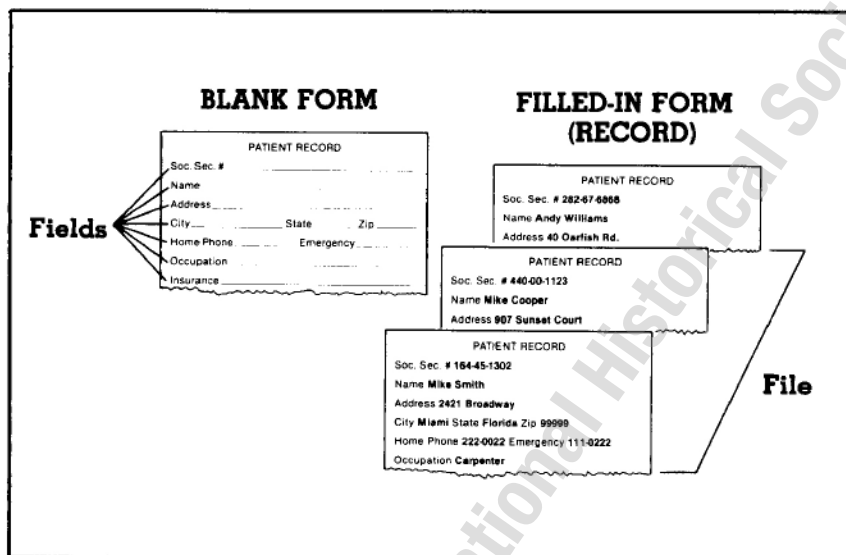
A Database operates on the principle that the information which has become such an important part of our daily lives is usually kept on FORMS. A FORM is a piece of paper upon which is printed a number of titles prompting us to fill-in information which is desired by an individual or organization.

Each title, and the calibrated line which follows it, is a FIELD of information which the individual or organization feels important to store on you and the rest of the people which complete that particular FORM.

When you sit down and fill a FORM out, it becomes a RECORD of information which pertains solely to you. In other words, when you first visited your doctor's office, he had you fill out a FORM. When finished, it was no longer a FORM, it was a RECORD which dealt exclusively with information on you, his patient.

RECORDS which have been filled out on the same FORM are grouped together in a storage facility called a FILE. Your doctor undoubtedly has a number of filing cabinets full of records pertaining to all of his clients. This is the "Patient FILE" which he accesses in order to update your health RECORD, prepare a special mailing, or send out bills.

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The structure of a computer database uses all of these same components. Users compose a **FORM** on the screen which is comprised of a number of different **FIELDS**. There are no limitations on what the **FIELDS** can deal with (people, places, things, etc.), and few limitations on how large they can be.

Information is entered on this blank **FORM**, creating an individual **RECORD** with each completed **FORM**. The number of **RECORDS** a **DATABASE** user can enter is limited only by the size of each **RECORD** and the capacity of his or her disk drive. Information entry can be done in any number of sittings, in random order. **RECORD** deletion and editing is a simple matter.

The **RECORDS** are placed in a **FILE** on the disk drive which will be identified by a special name the user defines. They can be recalled individually, or in sorted order (alphabetic or numeric) by specific **FIELDS**. They can even be reviewed selectively according to criteria which the user specifies. Special **PRINT** functions generate random or sorted **LISTS**, **FORMS**, **REPORTS**, and **LABELS**.

INTRODUCTION

The creation and manipulation of a DATABASE is accomplished through a special software package called a DATABASE MANAGEMENT SYSTEM. Not all DATABASE MANAGEMENT SYSTEMS are the same. They vary considerably in key areas such as ease of use, power, and breadth of application.

Uses of a Database Management System

A powerful, easy-to-use DATABASE MANAGEMENT SYSTEM has applications in all walks of life. Homemakers, educators, students, doctors, lawyers, business people (and more!) are finding an ever-growing list of applications to which a system such as the MIRAGE DATABASE MANAGER can be put. The list is limited only by your imagination and creativity!

While these applications are far too numerous to mention, it may be appropriate to throw-out a few examples of the forms you can design just to spark your imagination:

CUSTOMER LIST

You are a store owner and would like to keep track of your regular customers in order to send them information on upcoming promotions. The form you design may be something like this:

CUSTOMER LIST			
Name	_____		
Address	_____		
City	State	Zip	
Phone	Credit Rating		_____
Date of Last Purchase _____			

INTRODUCTION

HOME INVENTORY

Item _____

Description _____

Date of Purchase _____

Purchase Price _____

Depreciated Value _____

Warranty _____ Room _____

HOME INVENTORY

As a home owner, you are concerned with fire, theft, and warranties. In order to keep track of your possessions, you might design a form like this, fill it in, and keep a copy of the file in your safe deposit box.

INTRODUCTION

PATIENT RECORD

As a doctor, it is important for you to keep accurate records on all of your patients. Your Patient Record File can be simpler or more complex than this one.

PATIENT RECORD		
Soc. Sec. #	_____	
Name	_____	
Address	_____	
City	State	Zip
Home Phone	Emergency	
Occupation	_____	
Insurance	_____	
Bill To	_____	
Last Treatment Date	_____	
Drug Allergies	_____	

History	_____	

Treatment Record	_____	

Now put your mind to work. If you understand the concept behind a Database Management System, your head has to be spinning with great ideas on how a program like this can save you hours of time! Why, it might even be fun as well!

MIRAGE DATABASE MANAGER OVERVIEW

Origins of the MIRAGE DATABASE MANAGER

The MIRAGE DATABASE MANAGER was written during the first half of 1983 by professional programmers who had obtained Commodore 64 computers for home and recreational uses. Realizing the untapped potential of the machine, and the total void of strong application software available for it, these programmers set out to produce a series of programs which would rival those compatible with computers costing thousands of dollars more. Their guidelines were simple: make the programs powerful, practical, and easy-to-use,

INTRODUCTION

while keeping the price in a range deemed reasonable by users from all walks of life. We think they succeeded admirably in reaching these goals, and we think you'll agree!

Features and Benefits

MIRAGE CONCEPTS' DATABASE MANAGER is a comprehensive electronic filing system that makes it easy to organize, maintain, and effectively use all the information you must handle in your home, school or business.

It will instantly and accurately do just about everything you want done with the information you file: store, search, sort, retrieve, display, calculate, and print reports, lists, and even mailing labels.

As your information needs revision, the merge feature of the DATABASE MANAGER allows you to change your file formats easily, without time-consuming re-entry.

You can file almost any kind of information: name and address lists, prospect and customer files, personnel records, parts lists, home inventories — and do it faster, better and smarter with the DATABASE MANAGER Program.

You can do more than just file, because DATABASE MANAGER data can be transferred automatically to all of the popular Commodore 64 word processing packages including MIRAGE CONCEPTS' own WORD PROCESSOR package.

Program highlights include:

- 100% Machine Language
- Free Form Design and Input
- Sort On any Field/any Level
- Calculated Fields
- Full Use of Cursor & Function Keys
- Menu Driven
- Screen Oriented

INTRODUCTION

Specifications

- Maximum number of records per file ... 65,535
- Maximum record size ... 2,000 characters
- Maximum number of fields per record ... 200
- Maximum field size in characters ... 250
- Maximum form length ... 2,500 characters (roughly 60 screen lines)

Typical File Capacity

This program will store approximately 150,000 characters of information on a single Data Diskette. Therefore, if you create a Form consisting of a total of 100 characters spread throughout any number of Fields, you will be able to store around 1500 Records on each Data Diskette. On the other hand, if you create a Form requiring only 50 characters per Record, you will be able to store 3000 Records on a Data Diskette.

There are other factors which deserve your consideration before planning the eventual capacity of the Files you create. If you intend to SORT your Records, Create a SUBFILE, MERGE two Files, or create a SEQUENTIAL File, there must be extra room on your Data Diskette to accommodate these functions.

Needless to say, it will be to your advantage to CREATE FORMS WHICH ARE AS SMALL AS POSSIBLE to achieve the purpose you have in mind.

THE COMPUTER

System Requirements

The MIRAGE DATABASE MANAGER requires the following hardware in order to function properly:

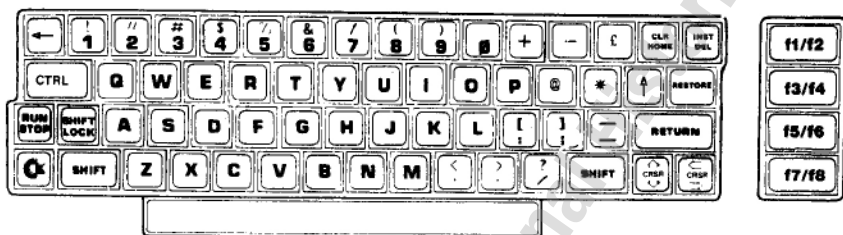
- Commodore 64 Computer
- Commodore 1541 Disk Drive
- or
- Commodore 2031 Disk Drive w/Interface

INTRODUCTION

The following printer equipment is **OPTIONAL** for usage with the **DATABASE MANAGER**:

- Commodore 1525 Printer
- or
- Non-Commodore Printer with compatible Interface

The Keyboard



Before you start with the **BEGINNING TUTORIAL**, take a few moments to familiarize yourself with the keyboard of the Commodore 64. You will find it similar to a standard typewriter keyboard. There are, however, a number of new keys which control specialized functions. Some of these are used in conjunction with the **DATABASE MANAGER** program, and deserve closer scrutiny.

Return — The "RETURN" key signals the computer to look at the information you've typed and enters that information into memory. It is located on the right side of the keyboard, third row from the top.

Shift — The "SHIFT" key works like that on a standard typewriter, acting as a toggle between upper and lower case type modes. Many keys are capable of dual functions when used in conjunction with the SHIFT key in upper or lower case. There are two SHIFT keys on the keyboard's lower row.

Shift Lock — Just above the SHIFT key on the left side of the keyboard is the "SHIFT LOCK" key. This key serves the purpose of placing all functions in an upper case mode. Use of the SHIFT LOCK key during certain applications of the **DATABASE MANAGER** will produce unproductive (though not damaging) results. We suggest you stay away from using this key.

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Cursor — There are two keys marked "CRSR", one with up and down arrows, the other with left and right arrows. You can use these keys to move the cursor up and down or left and right. Both are located in the lower right-hand corner of the keyboard. Experiment moving the cursor around the screen before you begin the DATABASE MANAGER TUTORIAL.

Insert/Delete — If you hit the "INST/DEL" key, the cursor will move back a space, erasing the previous character you typed. The upper case function of this key (INSERT) is disabled in the DATABASE MANAGER. The INST/DEL key is located in the upper right corner of the keyboard.

Control Key — The first key (on the left) in the second row from the top is the Control Key labeled "CTRL". There is only one time in the DATABASE MANAGER program that this key is used. When listing the files on your Data Diskette you may depress this key to slow the listing down.

Function Keys — On the right side of the keyboard you will find four brown keys arranged vertically and labeled ON THE TOP with the numbers "F1", "F3", "F5", and "F7". These are the "FUNCTION KEYS" which are used extensively throughout the DATABASE MANAGER program. They serve no specific purpose and are "dead" to the user except when programmed through software to accomplish a specific task. Eight separate functions can be defined by a programmer using these keys. "F2", "F4", "F6", and "F8" are values activated with the SHIFT KEY depressed.

There are other keys unique to the Commodore 64 which appear on the keyboard ("COMMODORE KEY", "CLR/HOME", "RUN/STOP", "RESTORE", etc.). These keys are not used in the execution of MIRAGES' program.

If you need further help in familiarizing yourself with the keyboard of the Commodore 64, consult Chapter Two ("Getting Started") of the 64 User's Guide.

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THE PROGRAM DISKETTE

The MIRAGE DATABASE PROGRAM DISKETTE can be found in the front, inside pocket of your three-ring binder. It is a standard 5.25", single-sided, double density computer diskette. The DATABASE program has been expertly copied on the diskette and a write protect tab has been affixed over the notch on the right hand side to prevent you from inadvertently writing over the DATABASE program. **DO NOT REMOVE THE WRITE PROTECT TAB FOR ANY REASON!**

The Program Diskette Serial Number

At the top of your Program Diskette is a label upon which has been printed the MIRAGE CONCEPTS logo and a DATABASE MANAGER heading. A special serial number has also been stamped on it allowing us to instantly identify what program you are using, when it was released, and what version it is. **DO NOT REMOVE THIS LABEL OR ALTER THE SERIAL NUMBER. IT WILL VOID YOUR WARRANTY.**

When communicating with MIRAGE CONCEPTS concerning your program, always refer to the serial number stamped on the program diskette.

How To Obtain a Back-up Copy

A special copy protection system has been used to prevent the unlawful duplication of the DATABASE MANAGER. If you would like a back-up copy of the program diskette, enclose a check or money order for \$7.00 in the WARRANTY REGISTRATION ENVELOPE when you return it to MIRAGE CONCEPTS. A duplicate program diskette will be rushed to you. Only one back-up copy will be issued for each package purchased.

How To Obtain a Replacement Copy

If a program diskette fails to perform properly at any time, and the problem can be isolated to the software, a new program diskette will be issued to you **UPON RECEIPT OF YOUR DEFECTIVE ONE**. There is no charge for this service if the program is in warranty, but a copy of your sales receipt must accompany the defective diskette in order to verify the date of purchase. A service charge of \$10.00 must accom-

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pany program diskettes out of warranty. Use the **REPLACEMENT DISK FORM** in the back of the manual for this purpose.

How To Obtain a Program Update

There is always the possibility that an extremely complex program such as the **DATABASE MANAGER**, will undergo a fair amount of upgrading in the years to come. These upgrades will be due either to 1) programming error, or 2) user-requested enhancement. In the case of the former type of update (programming error), you will be entitled to a new Program Disk free-of-charge. The latter (user-requested enhancement) will be made available to current owners at a fee based on the degree of program change. In either case, you will be notified of any upgrade and the procedure for obtaining it, using the information received by **MIRAGE CONCEPTS** on your **WARRANTY REGISTRATION**. It is, therefore, imperative that you return your **WARRANTY REGISTRATION** immediately upon opening the program.

THE DATA DISKETTE

The information (**DATA**) you enter into the **DATABASE MANAGER** will not be stored on Program Diskette (this diskette is write protected). This guards against accidental over-write and prevents unwarranted wear on the most important element of your system (the Program Diskette).

When the program has loaded completely, you will be prompted to remove your Program Diskette and insert your **DATA DISKETTE**. You may have an unlimited number of **DATA DISKETTES**, each with one or more files stored on it. Just make sure you label them carefully and insert the one which contains the file you wish to use. Note: Depending on the size of the Files, it may be most prudent to limit each Data Diskette to just one or two Files.

DATA DISKETTES MUST BE FORMATTED TO WORK IN CONJUNCTION WITH COMMODORE DISK DRIVES. This task can easily be accomplished within the **DATABASE MANAGER** program; the procedure is outlined in **LESSON ONE** of the **TUTORIAL**.

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CARE OF COMPUTER DISKETTES

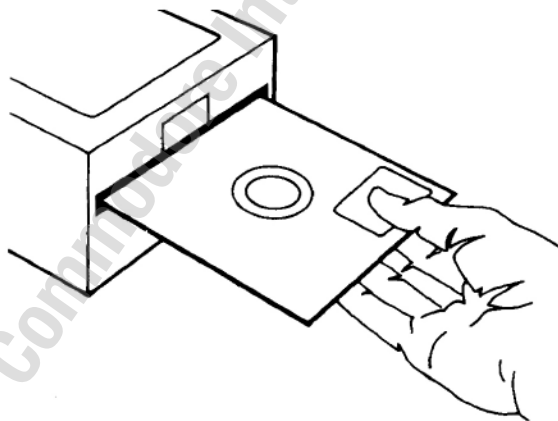
Proper care of computer diskettes is essential to the successful performance of the programs they contain. Diskettes should be handled delicately. Folding, bending, and mutilating will decrease the chances of efficient program and data retrieval.

At no time should you touch the actual surface of a diskette (brown or grey plastic).

When not using diskettes, take special care to make sure they are stored properly. Insert them, first of all, in their individual sleeves. Store in a crush-proof container in a cool, dry place free of dirt, lint, and dust. Do not place them in close proximity to t.v. sets, monitors, or magnetic devices of any type.

INSERTING AND REMOVING DISKETTES

To insert diskettes in a Commodore disk drive, first open the door by pushing slightly in and up on the handle. The diskette is slipped into the slot with the label facing upward as shown in the illustration. The edge of the diskette with the oval cutout should enter the drive first; the edge with the label should enter face up and last.



Push the diskette gently into the drive. Do not bend it. When it is totally in the drive, close the drive door by pushing it straight down and pulling slightly out.

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To remove a diskette, open the door and pull the diskette straight out of the slot. Opening the drive door lifts the read/write head from the diskette surface. If you leave a diskette in a drive for long periods of time without use, it is a good idea to open the door so the read/write head does not rest on the diskette.

Never remove a diskette while the IN USE light on the drive is lit. This can permanently damage the diskette and will almost certainly destroy the information on it.

PRINTERS

The programming staff at MIRAGE CONCEPTS has written this program to be completely compatible with printers made by Commodore to work WITHOUT MODIFICATION on the Commodore 64 personal computer. While it is likely that it will run correctly on standard Centronics parallel printers with appropriate interfaces, we cannot make this guarantee. The sheer number of combinations made possible in interfacing the scores of printers and interfaces available render it virtually impossible for us to make such a claim.

If the printer you are currently using has the capacity to print in alternate fonts, there is a good possibility that you may use these fonts in relation to the DATABASE MANAGER (compressed print will be particularly valuable). Before loading the DATABASE MANAGER, try sending the appropriate ASCII code for an alternate typestyle to your printer (consult your printer manual). You may then load the DATABASE MANAGER program as usual, testing the PRINT mode to see if you have succeeded.

HINTS ON DATABASE MANAGER OPERATION

Here are a couple of hints to keep in mind while operating the DATABASE MANAGER from MIRAGE CONCEPTS:

- 1) In as many cases as possible, the function keys have been programmed to achieve the same purpose on each menu.

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F1 = PREVIOUS (Field or Record)	F2 = FIRST (Field or Record)
F3 = NEXT (Field or Record)	F4 = LAST (Field or Record)
F5 = SAVE, SELECT, or EDIT	F6 = SCROLL DOWN
F7 = EXIT or QUIT	F8 = SCROLL UP

There are some exceptions to this rule, but it is still a good one to keep in mind.

- 2) **IN THE HIGHLY UNLIKELY CASE THAT YOU GET HOPELESSLY LOST WITHIN THE PROGRAM, JUST KEEP PRESSING THE F7 FUNCTION KEY.** Because it is always defined EXIT or QUIT, you will eventually be returned to the MAIN MENU. None of the secondary menus contain prompts for EXITING them. It is understood that you may always EXIT using the F7 key.
- 3) It is very important that you create your database intelligently — with planning and forethought. Make sure to include all of the fields necessary to do the job you want done. At the same time, do not set-up fields with information which you will never use (this will be your tendency). Stick to the simple basics. Keep your fields short. They will take up less space on the Data Diskette and require considerably less time for Sorting, Packing, etc. if you do. If you want to use the MAILING LABEL function of the DATABASE MANAGER, make sure you stay within the parameters as defined in LESSON SIX.
- 4) It is a good idea not to use the SHIFT LOCK Key during the operation of the DATABASE MANAGER program. Although it will work as it should, your tendency will be to forget it is on when attempting to execute other program functions. Leaving it on will most likely "freeze" the keyboard, and you will not be able to diagnose the problem.
- 5) We cannot over emphasize the importance of regularly making BACK-UP copies of your Files. A BACK-UP is an exact duplicate of the File, stored on a different Data Diskette than the original. This guards against accidental erasure, diskette damage or loss, or problems which can be attributed to the computer or disk drive.

TUTORIAL

BEGINNING TUTORIAL

Welcome to the BEGINNING TUTORIAL! In this section, LESSONS ONE to FIVE, we will be laying the foundation for your effective usage of the DATABASE MANAGER program. We've named it the BEGINNING TUTORIAL because we assume nothing on your part except the fact that you have read through, and studied carefully the INTRODUCTION to this User's Manual.

Each lesson has been written with you in mind. Verbose computer terminology has been eliminated in favor of a tutorial style structured to be informative, yet extremely easy to follow and comprehend. There is no need to rush through each lesson. Study them carefully. Take your time and enjoy learning how powerful and useful your computer can be.

This section of the TUTORIAL will begin with the creation of a new form. The form will become a record in LESSON TWO where you'll learn how to append (add records into) your file. With a number of records entered in the system, you'll learn how to review and edit them, followed by the techniques necessary for sorting them into any order you might choose. The BEGINNING TUTORIAL will conclude with a lesson how to send information in a number of different formats to a printer.

We sincerely hope you enjoy every minute spent working with the DATABASE MANAGER from MIRAGE CONCEPTS!

LESSON ONE – LOAD, CREATE, SAVE

This lesson assumes that you have read through the INTRODUCTION and are now ready to design and enter your own form.

We will first learn how to LOAD the DATABASE MANAGER.

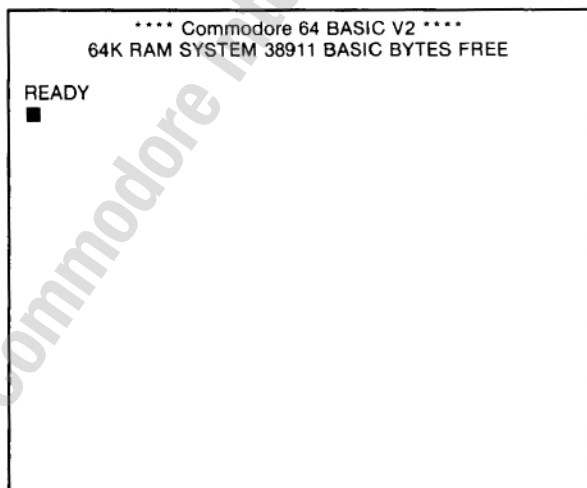
With the DATABASE MANAGER loaded, you will be taught how to CREATE a data diskette upon which you will store the information you enter.

You will be instructed on how to DESIGN your form and enter it on the screen.

The lesson will conclude with SAVING this form on your data diskette and LEAVING the program.

LOADING THE PROGRAM

Turn on your computer. With this completed, turn on your disk drive and monitor. The screen should look like this:



If the screen does not look like this, check your connections and make sure everything is plugged in. If that still does not solve the problem, contact your Commodore dealer for assistance.

The cursor (the little flashing box) should be under the word **READY**.

Insert the MDB Program into the disk drive. (For the correct diskette loading procedure, consult the INTRODUCTION.)

With the MDB Program Diskette in the drive, type in the following command on the computer keyboard:

LOAD "MDB", 8

It makes no difference if it is typed in upper or lower case, just as long as you stay in the same mode throughout the entry. When you are finished, press the RETURN ([CR]) key.

The red light on your disk drive will come on and you will hear some whirring noises. A "boot" or start-up program is being loaded into the computer. IT NORMALLY TAKES ABOUT 10 TO 15 SECONDS FOR THIS BOOT PROGRAM TO LOAD IN. When it is finished, the disk drive will stop spinning and the red light will go off. The screen, assuming that the program has loaded correctly, will look like this:

DATABASE MANAGER

USER'S
MANUAL

LESSON ONE

TUTORIAL

```
**** Commodore 64 BASIC V2 ****
64K RAM SYSTEM 38911 BASIC BYTES FREE

READY

LOAD "MDB", 8

SEARCHING FOR MDB
LOADING
READY
■
```

If one minute has passed and your screen does not look like this, then turn your computer off, wait for the red light on the disk drive to go out, open the disk drive door and remove the program diskette. Turn off your drive and monitor and start over. If you still are unsuccessful, contact your Commodore dealer or phone MIRAGE CONCEPTS' Customer Support Department.

To begin execution of the program type:

RUN [CR]

The program's Title Page will appear, and the disk drive will once again begin to spin. The actual MIRAGE DATABASE MANAGER program is now being loaded into the machine. THE PROGRAM WILL TAKE APPROXIMATELY ONE MINUTE AND FIFTEEN (15) SECONDS TO LOAD COMPLETELY. If you have waited for three minutes and the following screen has not appeared, follow the error instructions detailed above.

The screen should now look like this:

MIRAGE DATABASE 1.0 *REMOVE THE MIRAGE PROGRAM DISK AND INSERT YOUR DATA DISKETTE
PRESS RETURN WHEN YOU ARE FINISHED ■

TAKE YOUR PROGRAM DISKETTE FROM THE DISK DRIVE and insert a **BLANK** diskette (single-sided, double density, soft sector). This diskette need not be formatted. We will format it in just a moment. With a **BLANK** diskette in the drive, press **RETURN [CR]**.

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The DATABASE MANAGER'S MAIN MENU will appear on the screen. It looks like this:

MIRAGE DATABASE 1.0	FILE: NO FILE
1) SELECT FILE	5) PRINT RECORDS
2) APPEND FILE	6) CREATE NEW FORM
3) REVIEW/EDIT	7) FILE COMMANDS
4) SORT RECORDS	8) QUIT
ENTER THE NUMBER OF THE COMMAND ■	

This is the MAIN MENU from which options can be chosen to take you to all functions of the DATABASE MANAGER. It works just like the MENU in a restaurant. Select the option you desire and press the appropriate number to relay your choice to the program.

Note that on the top line is a title which reads "FILE: NO FILE". Later on, when we have created a database, the name you give it will appear after the title "FILE:". This will help you to remember the name of the file you are currently manipulating.

If "NO FILE" is in use, the program will not allow you to choose options #2 (APPEND FILE), #3 (REVIEW/EDIT), #4 (SORT RECORDS), and #5 (PRINT RECORDS). The logic behind this procedure will be explained as you continue through the TUTORIAL.

FORMATTING A NEW DATA DISKETTE

The first task at hand is to FORMAT the blank disk in your disk drive. THIS DISKETTE MUST BE FORMATTED before your Com-

modore computer can write information on it. The process is simple and can be accomplished without leaving the MDB program. The section that contains this option is called **FILE COMMANDS**. It is Command #7 on the **MAIN MENU** which is on your screen. Press the #7 key on your keyboard and the **MAIN MENU** will be replaced by a new menu entitled **FILE COMMANDS MENU**.

FILE COMMANDS MENU	
1) FORMAT NEW DISK 2) CREATE SUBFILE 3) REPLACE FIELDS 4) PACK FILE	5) MERGE FILES 6) CREATE SEQ 7) DIRECTORY 8) DELETE FILE
SELECT OPTION NUMBER ■	

To format a new disk, choose Option #1 (FORMAT NEW DISK) on the **FILE COMMANDS MENU**. Press the #1 key on your keyboard and the screen will look like this:

FORMAT NEW DISK *THIS ROUTINE WILL FORMAT A DISK *IT WILL COMPLETELY DESTROY ANY OLD DATA — DO YOU WISH TO CONTINUE?
ENTER (Y) FOR YES OR (N) FOR NO ■

IMPORTANT: FORMATTING A DISK COMPLETELY ERASES WHATEVER WAS ON THE DISK TO BEGIN WITH. CHECK TO MAKE SURE YOU HAVE REMOVED YOUR PROGRAM DISKETTE FROM THE DISK DRIVE AND THAT A NEW BLANK DISK HAS BEEN INSERTED PROPERLY IN THE DRIVE.

Press the letter "Y" for "Yes" and the computer will format your diskette. The disk drive light should come on and the disk drive will make various sounds which may include a kind of grinding noise at the very beginning. If this grinding noise continues or if the disk drive light begins to blink in a regular pulse, then an error has occurred. Check to make sure your diskette is inserted properly and that it is the proper diskette for your drive (consult your computer owner's manual).

Wait until the red light goes out (about 2 minutes). When it does, the process has been completed and the diskette has been formatted. The screen will return to the FILE COMMANDS MENU. (Full usage of the FILE COMMANDS section is covered in LESSON TEN.) Press F7 to return to the MAIN MENU. REMEMBER: YOU MAY ALWAYS PRESS THE F7 FUNCTION KEY IF YOU CANNOT FIGURE OUT WHERE YOU ARE IN THE PROGRAM. YOU WILL, IN ALL CASES, BE EVENTUALLY RETURNED TO THE MAIN MENU.

CREATING A NEW FORM

Every Database Management System has certain parameters within which you must stay when creating your form. For the DATABASE MANAGER these parameters are:

- 1) No more than 200 fields per record (form)
- 2) No more than 250 characters per field
- 3) No more than 2000 characters per record (excluding titles)
- 4) No more than 2500 characters per record (including titles)

These limitations are quite broad, and you should have little trouble creating even the most complex of forms within them.

Here are some suggestions for CREATING A NEW FORM:

- 1) Design your Form on paper before trying to enter it into the computer. Determine the **exact** number of spaces you will need for each field of information.
- 2) **KEEP YOUR FIELDS AS SHORT AS POSSIBLE.** This will leave room for more records on your Data Diskette, and enable the program to sort, pack, merge, etc. at a faster rate.

During this tutorial, we will create and manipulate a form which could be used to store information on students in a classroom. Type in all the information just as we have presented it. When we're done, you should be able to design, create, and manipulate your own database just like a professional.

If you were an administrator in a secondary school and you had an enrollment of 700 students, you might want to keep the following information on each pupil:

- 1) Student's Name
- 2) Address
- 3) City
- 4) State
- 5) Zipcode
- 6) Phone
- 7) Grade
- 8) Grade Point Average
- 9) Home Room Teacher

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These are just a few of the fields you might want to include in your **STUDENT INFORMATION DATABASE**. In this tutorial we will eliminate some of these fields so you won't have to wear yourself out typing instead of learning.

Let us begin to enter this form into the computer. The **CREATE NEW FORM** command is #6 on the **MAIN MENU** which should be on the screen in front of you. Press the #6 key and the **CREATE NEW FORM** menu will appear on the screen. It looks like this:

CREATE NEW FORM *TYPE FIELD NAME (IF ANY) *F1 = UNDERLINE FOR FIELD LENGTH *F5 = FINISHED CREATING FORM *F7 = EXIT (DO NOT SAVE NEW FORM)
ENTER FORM NOW
■

The cursor should be flashing below the words **ENTER FORM NOW** at the top of the blank space (this is where our new form will go). You can move the cursor around using the two cursor keys on your computer keyboard (the two keys with the double arrows on them). Try moving the cursor around using these two keys now. Remember, you must use the **SHIFT KEY** to change direction of the cursor keys.

Now that you are familiar with moving the cursor around, let's begin designing our new form. Move the cursor to the top of the blank form and about 5 spaces over from the left margin. Enter the title of our new database: **STUDENT INFORMATION DATABASE**. You don't need a title, but it helps you remember what file you are working with.

CREATE NEW FORM *TYPE FIELD NAME (IF ANY) *F1 = UNDERLINE FOR FIELD LENGTH *F5 = FINISHED CREATING FORM *F7 = EXIT (DO NOT SAVE NEW FORM)
ENTER FORM NOW <div style="border: 1px solid black; height: 150px; margin-top: 5px; position: relative;"> <div style="position: absolute; top: 5px; left: 50px;">STUDENT INFORMATION DATABASE ■</div> </div>

The first field we want to enter is the **STUDENT'S NAME**. If we were to design a form on paper we probably would write something like "STUDENT'S NAME" with a long underline after it:

STUDENT'S NAME _____

With the MDB you do exactly the same thing only you put the information on the screen instead of paper.

Move your cursor down two lines and enter **STUDENT'S NAME** with one blank space and 25 underline characters after it (**PRESS THE F1 KEY TO GET AN UNDERLINE**). Check to make sure the **SHIFT/LOCK** key is not depressed. If it is, you will not be able to use the **F1** key. After you have entered the last underline, press the **RETURN** key and your cursor will return to the beginning of the next line.

To save confusion, and allow us to list the file out later in sorted order by the student's last name, enter the words **LAST** and **FIRST** below the underline to indicate how the name should be entered.

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CREATE NEW FORM *TYPE FIELD NAME (IF ANY) *F1 = UNDERLINE FOR FIELD LENGTH *F5 = FINISHED CREATING FORM *F7 = EXIT (DO NOT SAVE NEW FORM)
ENTER FORM NOW
STUDENT INFORMATION DATABASE STUDENT'S NAME _____ LAST FIRST ■

To save time, we won't enter the student's full address, just the ZIP-CODE. We also will be working with the PHONE NUMBER, so make sure you set up a field for that. Although we can make these fields (lines) as long as we want (up to 250 characters), a local phone number is only going to be 8 characters long (that includes the dash), and a zipcode will only be 5 characters long (in the United States). WHEN YOU PRESS THE F1 KEY TO CREATE THE LENGTH OF THE FIELD, CREATE A FIELD NO LONGER THAN IS ABSOLUTELY NECESSARY. This will make room for more records on your Data Diskette.

Enter the PHONE and ZIPCODE fields now.

CREATE NEW FORM *TYPE FIELD NAME (IF ANY) *F1 = UNDERLINE FOR FIELD LENGTH *F5 = FINISHED CREATING FORM *F7 = EXIT (DO NOT SAVE NEW FORM)	
ENTER FORM NOW	
<div style="text-align: center; margin-bottom: 10px;"> STUDENT INFORMATION DATABASE </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> STUDENT'S NAME _____ </div> <div style="width: 50%; text-align: center;"> LAST FIRST </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 45%;"> PHONE _____ <div style="width: 10px; height: 10px; background-color: black; margin-left: 5px;"></div> </div> <div style="width: 50%; text-align: center;"> ZIPCODE _____ </div> </div>	

Next, we want to keep track of the grade level of each student and his/her present Grade Point Average (GPA). Give the **GRADE LEVEL** two underlines allowing us to enter any Grade Level 1 to 12. We need 4 underlines to define the Grade Point Average (e.g. 3.40) because of the need for a decimal point as a character.

CREATE NEW FORM	
*TYPE FIELD NAME (IF ANY)	
*F1 = UNDERLINE FOR FIELD LENGTH	
*F5 = FINISHED CREATING FORM	
*F7 = EXIT (DO NOT SAVE NEW FORM)	
ENTER FORM NOW	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____	
LAST	FIRST
PHONE _____	ZIPCODE _____
GRADE LEVEL _____	G.P.A. _____
■	

Although you have entered only five fields using a total of eight lines and 320 characters on the screen, forms which you create later can be as long as you wish (up to 2,000 characters in 200 fields). If you create a form larger than will fit on one screen, it will scroll to accommodate your entries!

CORRECTIONS

Now the form is complete. Compare your screen with the one above and check it carefully. If you made any errors, use the cursor keys to move back and correct them. The Delete Key [DEL] will delete the character to the immediate left of the cursor. If you made so many mistakes that you would rather just start over, press the F7 key to EXIT the CREATE NEW FORM section without saving the form you've created.

SAVING THE FORM

When you are sure that your new form is correct, press the F5 key (FINISHED CREATING FORM) to save it. The computer will ask you a question about calculated fields before it starts to work. In this form you do NOT have any calculated fields (we'll save that for later) so the correct answer to the question is "N" for "NO".

<p>CREATE NEW FORM</p> <p>*DO YOU WISH TO ENTER ANY CALCULATED FIELDS?</p>		
<p>ENTER (Y) FOR YES AND (N) FOR NO ■</p>		
<p>STUDENT INFORMATION DATABASE</p>		
<p>STUDENT'S NAME _____</p>		
	LAST	FIRST
PHONE _____	ZIPCODE _____	
GRADE LEVEL _____	G.P.A. _____	

The computer will now ask for a name under which this new form will be stored on your data diskette. The name you give it can be no longer than 10 characters, alphabetic and/or numeric, with periods and dashes. We strongly discourage the usage of any other forms of punctuation in relation to file names. It is also a good idea to choose a name that will remind you of what that database deals with. Let's call our new form STUDENT. After the prompt, ENTER FORM NAME, type-in STUDENT. Press RETURN when you are finished.

CREATE NEW FORM *ENTER FORM NAME *10 CHARACTERS MAXIMUM *[RETURN] = FINISHED		
ENTER FORM NAME STUDENT ■		
STUDENT INFORMATION DATABASE		
STUDENT'S NAME _____		
	LAST	FIRST
PHONE _____		ZIPCODE _____
GRADE LEVEL _____		G.P.A. _____

The red disk light will come on to indicate that the computer is saving your new form on the disk under the name STUDENT. WAIT UNTIL THE MAIN MENU COMES BACK ON THE SCREEN BEFORE YOU TRY TO CONTINUE (about 20 seconds) You will be returned to the MAIN MENU. Your form is now complete and has been saved on your new Data Diskette. The red light will remain ON (do not be alarmed — it will stay on during most of your use of the database. It does NOT wear out or harm your diskette or disk drive in any way.) Note that the upper right hand corner of the MENU indicates that STUDENT is the file currently in use.

EXITING THE PROGRAM

Although we don't need to exit the program at this point, let's do it anyway. Those of you who have had enough for one sitting can stop and come back later. Those of you who want to go on will see how easy it is to use your new form now that it has been created. Select command #8 on the MAIN MENU to QUIT the program. DO NOT TURN OFF YOUR COMPUTER YET! This is very important! The computer is saving valuable information and closing any open files. In a few moments the screen should clear and at the top left you will see the

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word **READY** once again. Remove your data diskette and store it in a safe place for later use. With the diskette removed, you may turn off your computer, disk drive, and monitor.

SUMMARY

You have just finished **LESSON 1**. In this lesson, you have learned how to:

- 1) Load the **MIRAGE DATABASE MANAGER** program diskette
- 2) Format a new data diskette
- 3) Create a new form
- 4) Save the form to your data diskette

In **LESSON 2**, you will learn how to fill-out your form and save the entries on your data diskette.

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LESSON TWO — APPEND

This lesson assumes that you have finished LESSON ONE and have a form called STUDENT on your data diskette. It is also necessary for you to be very familiar with the structure of a database as outlined in the INTRODUCTION.

In this lesson, we will fill in the blanks (fields) on your form with information and store that information to the data diskette.

STARTING UP

To begin LESSON TWO, follow this procedure:

- 1) Load the MDB program from the Program Diskette
- 2) Remove the Program Diskette and insert your Data Diskette
- 3) With the MAIN MENU on the screen, you may continue.

Problems? Consult the loading procedure outlined in LESSON ONE.

Don't forget: If you ever get lost within the program, keep pushing the F7 Function Key. You will eventually be returned to the MAIN MENU.

SELECTING A FILE

If you are not continuing from the previous lesson, the first thing we need to do is to bring up the form which we created in LESSON ONE. We need to recall that form from our data diskette, so choose Command #1 (SELECT FILE) to select the form (empty file) that we created.

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DATABASE MANAGER 1.0	FILE: NO FILE
1) SELECT FILE	5) PRINT FILE
2) APPEND FILE	6) CREATE NEW FORM
3) REVIEW/EDIT	7) FILE COMMANDS
4) SORT FILE	8) QUIT
ENTER THE NUMBER OF THE COMMAND 1 ■	

After entering the number "1", the program will ask you which file you wish to work with. Your response should be to enter the word **STUDENT**, which was the name we saved our form under in **LESSON ONE**. After entering the word **STUDENT**, press the **RETURN** key.

SELECT FILE
*ENTER THE NAME OF THE FILE YOU WISH TO USE
*[RETURN] = FINISHED
*F7 = EXIT FILE SELECTION
ENTER FILE NAME STUDENT ■

The red light on the disk drive will come on (and stay on) which indicates that it is loading the form called **STUDENT**. If you mis-typed the word **STUDENT**, the computer will display in the prompt line that there is a disk error. Press **RETURN** and re-enter the name correctly.

When it is finished, you will see the form you created in **LESSON ONE** on the screen with the **MAIN MENU** displayed at the top. Note that the top line indicates that **STUDENT** is the file currently in use.

DATABASE MANAGER 1.0		FILE: STUDENT	
1) SELECT FILE	2) APPEND FILE	5) PRINT FILE	6) CREATE NEW FORM
3) REVIEW/EDIT	4) SORT FILE	7) FILE COMMANDS	8) QUIT
ENTER THE NUMBER OF THE COMMAND ■			
STUDENT INFORMATION DATABASE			
STUDENT'S NAME _____		LAST FIRST	
PHONE _____		ZIPCODE _____	
GRADE _____		G.P.A. _____	

APPENDING A FILE

We are now ready to proceed with appending our file. When you **APPEND** a file, you add a completed record to it (ours is empty at this point). To **APPEND**, select Command #2 (**APPEND FILE**). Press the #2 key on your keyboard and the following screen will appear:

APPEND MENU *ENTER THE DATA YOU WISH TO ADD *F1 = PREVIOUS F2 = FIRST *F3 = NEXT F4 = LAST *F5 = SAVE F7 = EXIT	
FIELD NUMBER 1	RECORD NO. 1
STUDENT INFORMATION DATABASE	
STUDENT'S NAME ■ _____	
LAST	FIRST
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

The cursor will be flashing at the beginning of your first field, **STUDENT'S NAME**. Press the **F3** key once. The cursor will now be at the beginning of your next (or second) field, **PHONE**. Press the **F1** key once and you should be back at the beginning of the first field. The **F2** and **F4** (don't forget the shift!) keys work in a similar manner taking you to the **FIRST** field or the **LAST** field respectively.

Make sure your cursor is at the beginning of field #1 (**STUDENT'S NAME**). We want to enter our first student's name here. Remember, we are entering the last name first and then the first name. Place a comma between the two (e.g. Smith, Steve). Enter "Smith, Steve" into the computer now. **WHEN YOU ARE FINISHED, PRESS [RETURN]. DO NOT PRESS [F3]. IF THE FIELD IS NOT FULL, AND YOU PRESS [F3] INSTEAD OF [RETURN], THE INFORMATION TYPED WILL NOT BE ENTERED.** The **[F3]** key is for the movement of the cursor only — not for data entry.

When you press **[RETURN]**, the cursor will automatically jump to the beginning of the next field (**PHONE**).

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APPEND MENU *ENTER THE DATA YOU WISH TO ADD *F1 = PREVIOUS F2 = FIRST *F3 = NEXT F4 = LAST *F5 = SAVE F7 = EXIT	
FIELD NUMBER 2	RECORD NO. 1
STUDENT INFORMATION DATABASE	
STUDENT'S NAME Smith, _ Steve _____ <div style="display: flex; justify-content: space-between; width: 100%;"> LAST FIRST </div>	
PHONE ■ _____	ZIPCODE _____
GRADE _____	G.P.A. _____

Enter the **PHONE** number, 222-3439. As soon as you enter the last digit of the **PHONE** number (9), you should have reached the end of your field. The computer will automatically move the cursor to the beginning of the next field so you don't have to press the **RETURN** key. This will occur only when you have entered a name or value that extends the full length of the field on your form. **BE VERY CAREFUL NOT TO PRESS [RETURN] IF THIS OCCURS.** The program has already generated the **[RETURN]**, and in pushing it again you will inadvertently skip the next field.

IF YOU EVER TYPE-IN A NUMBER WHICH DOES NOT FILL THE ENTIRE FIELD, AND PRESS [RETURN] TO ENTER IT, YOU WILL NOTE THAT THE NUMBER IS AUTOMATICALLY MOVED TO THE RIGHT SIDE OF THE FIELD. This is standard Database procedure.

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APPEND MENU	
*ENTER THE DATA YOU WISH TO ADD	
*F1 = PREVIOUS	F2 = FIRST
*F3 = NEXT	F4 = LAST
*F5 = SAVE	F7 = EXIT
FIELD NUMBER 3	RECORD NO. 1
STUDENT INFORMATION DATABASE	
STUDENT'S NAME Smith, _ Steve _	
LAST	FIRST
PHONE 222-3439	ZIPCODE ■ _
GRADE _	G.P.A. _

Now enter the ZIPCODE, "56345" (notice the cursor jumps to the beginning of the next field), the GRADE LEVEL, 7, and the G.P.A. for Steve Smith, 3.40. After entering the G.P.A. you will see that the cursor is positioned at the last position of the G.P.A. field. The cursor has stopped at this position because it is the last one on the form. **MAKE THIS CRITICAL NOTE: IF YOU DO NOT FILL THE LAST FIELD OF YOUR RECORD, YOU MUST PRESS [RETURN] BEFORE PROCEEDING TO SAVE THAT RECORD OR THE INFORMATION YOU ENTERED IN THE LAST FIELD WILL BE LOST.** The program will NEVER generate a [RETURN] itself unless a given field is completely full.

CORRECTIONS

Check over your completed record (filled-in form) for any errors. Let's assume that you made a mistake and entered the wrong ZIPCODE. Press the F3 key twice to move the cursor to the beginning of the ZIPCODE field. Re-enter the corrected ZIPCODE, "56347".

SAVING A RECORD

Your form has now been completely filled-out and corrected. You have created a **RECORD** which will now be the first entry in your **FILE** called **STUDENT**. Press the **F5** key to save **RECORD #1** (Steve Smith). The computer will quickly write the new **RECORD** on the disk. Do not be worried if the disk drive does not come to life. It will often wait until it has more than one **RECORD** in its memory before it writes them on the disk. Technically, **RECORDS** are not **SAVED** until you **EXIT** the **APPEND FILE** Mode. If you are entering a large number of **RECORDS**, we suggest that you regularly **EXIT** and **RE-ENTER** the Mode to guard against accidental data loss.

The **RECORD** on Steve Smith has been added to the **FILE**. The computer will now erase Steve Smith's information from the screen preparing you to add another **RECORD** to the **FILE**.

APPEND MENU *ENTER THE DATA YOU WISH TO ADD *F1 = PREVIOUS F2 = FIRST *F3 = NEXT F4 = LAST *F5 = SAVE F7 = EXIT	
FIELD NUMBER 1	RECORD NO. 2
STUDENT INFORMATION DATABASE	
STUDENT'S NAME ■ _____ <div style="display: flex; justify-content: space-around; width: 100%;"> LAST FIRST </div>	
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

At this point we'll let you enter four more records on your own. For the sake of further examples in our tutorial, it will be best if we work with the same information. Please enter the following data in the proper fields of those four new records:

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<u>STUDENT NAME</u>	<u>PHONE</u>	<u>ZIPCODE</u>	<u>GRADE</u>	<u>G.P.A.</u>
Dean, Jan	234-4433	56349	8	2.76
Jones, Bill	222-1222	56340	7	3.00
Smith, Mike	227-7878	56340	10	1.98
Zorro, Alfred	222-2345	56351	7	3.90

If you realize that you made a mistake in data entry **AFTER** saving it, you may change it in the **REVIEW/EDIT** mode detailed in **LESSON THREE**.

Did you note that when you entered the "8", "7", and "7" in the **GRADE** field, they right justified?

EXITING THE APPEND MODE

After entering Alfred Zorro's information and saving it, you have 5 records in your database. That wasn't so hard was it? You should have a blank form on your screen ready to enter **RECORD #6**. Since five records is all that we're going to add right now, press the **F7** key to **EXIT** the **APPEND** mode and return to the **MAIN MENU**.

You can quit now or continue on to the **LESSON THREE**. If you want to quit, press **Command #8 (QUIT)** and you **EXIT** the program. If you wish to continue, stay right where you are on the **MAIN MENU**.

One point should be made clearly before we leave this lesson. It is absolutely imperative that you make a "**BACK-UP**" copy of your important data files regularly. If you do not, you are courting disaster. To do so, use the "**COPY 1541**" program provided with your disk drive.

SUMMARY

In **LESSON TWO** you learned how to:

- 1) Re-enter the program and **SELECT A FILE**
- 2) **APPEND** the file with new records
- 3) Make corrections on a record
- 4) Save the record

LESSON THREE will teach you how to **REVIEW** and/or **EDIT** the records you've entered.

LESSON THREE — REVIEW/EDIT

LESSON THREE assumes that you have created a file (LESSON ONE), and placed five records in that file using the append function outlined in LESSON TWO.

In this lesson, we will learn how to REVIEW the records we saved in LESSON TWO.

We will also learn how to EDIT (i.e. change the values of the records that are already on the disk). From the REVIEW/EDIT section we can also delete unwanted RECORDS from the file.

STARTING UP

If you are continuing from LESSON TWO, skip to REVIEWING THE FILE.

If you are NOT continuing from LESSON TWO, follow this procedure:

- 1) Load the MDB program from the Program Diskette
- 2) Remove the Program Diskette and insert your Data Diskette
- 3) With the MAIN MENU on the screen, choose Option #1 (SELECT FILE)
- 4) Load the file: STUDENT
- 5) With the MAIN MENU back on the screen, you may continue.

Problems? Consult the STARTING UP Procedure outlined in LESSON TWO followed by the section on SELECTING A FILE.

Please be reminded once again that you may press the F7 key at any time in case you get hopelessly lost within the program.

REVIEWING THE FILE

Reviewing the FILE is part of the REVIEW/EDIT section, which is Command #3 on the MAIN MENU. Press the #3 key to enter the REVIEW/EDIT section.

The REVIEW/EDIT MENU is now displayed. You are given two types of REVIEW at this point. Using Option #1, you may REVIEW ALL records of your file. With Option #2, you will be asked to SELECT JUST ONE record of your file to REVIEW. You may EDIT in either mode.

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REVIEW/EDIT MENU	
1) REVIEW/EDIT ALL RECORDS 2) SELECT/EDIT INDIVIDUAL RECORD	
SELECT OPTION NUMBER ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____	
LAST	FIRST
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

We will first learn to use Option #1, REVIEW/EDIT ALL RECORDS. Press the #1 key on your keyboard.

If you were currently using this STUDENT file in conjunction with a SORT INDEX (LESSONS FOUR and SEVEN), you would now be asked if you want to REVIEW this file in sorted order. We are NOT using a SORT INDEX, so you will not see this screen.

The next question the computer WILL ask is whether you would like to enter a conditional statement. Entering a conditional statement at this point would allow you to REVIEW only the records of your file which satisfy certain conditions which you define in the statement. Conditional statements are covered in LESSON NINE of the Advanced Tutorial. Answer "N" to this question. The computer should now be displaying the first record (filled-in form) that we entered in LESSON TWO, "Smith, Steve".

REVIEW *F1 = PREVIOUS *F2 = DELETE *F3 = NEXT *F6 = SCROLL DOWN *F5 = EDIT *F8 = SCROLL UP *F7 = EXIT	
RECORD NUMBER 1 ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME Smith, _ Steve _ <div style="display: flex; justify-content: space-between; width: 80%; margin: 0 auto;"> LAST FIRST </div>	
PHONE 222-3439	ZIPCODE 56347
GRADE _7	G.P.A. 3.40

To see the next record in the file, all we need to do is press the F3 (NEXT) key once. Press the F3 key again and the next record will be shown on the screen. Continue pressing the F3 key until you reach the end of the file (it will stay on RECORD #5). Now press the F1 (PREVIOUS) key and the screen should display the previous record (#4). You may notice that REVIEWING backwards through a file is just a bit slower than REVIEWING forward through a file. Continue pressing the F1 key until you reach the first record again. You have just finished a complete REVIEW of your file.

EDITING A RECORD

For the sake of an example, let's say that as you were reviewing, you noticed that Mike Smith's ZIPCODE was incorrect. Let's go back and correct his record.

Press F3 (NEXT) until Mike Smith's record shows on the screen.

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REVIEW	
*F1 = PREVIOUS	*F2 = DELETE
*F3 = NEXT	
*F5 = EDIT	*F6 = SCROLL DOWN
*F7 = EXIT	*F8 = SCROLL UP
RECORD NUMBER 1 ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME Smith, _ Mike	
LAST	FIRST
PHONE 227-7878	ZIPCODE 56340
GRADE 10	G.P.A. 1.98

In order to **EDIT** this record, press the **F5 (EDIT)** key. The computer switches you immediately into **EDIT Mode**.

EDIT	
*ENTER NEW INFORMATION	
*F1 = PREVIOUS	*F2 = FIRST
*F3 = NEXT	*F4 = LAST
*F5 = SAVE	*F7 = EXIT
FIELD NUMBER 1	RECORD NUMBER 4
STUDENT INFORMATION DATABASE	
STUDENT'S NAME ■ Smith, _ Mike	
LAST	FIRST
PHONE 227-7878	ZIPCODE 56340
GRADE 10	G.P.A. 1.98

The cursor will be flashing at the front of the **STUDENT'S NAME** field. Press the **F3 (NEXT)** key twice to move the cursor to the front of the **ZIPCODE** field. At this point you can either retype the whole **ZIPCODE** or press the right cursor key to move the cursor over and re-enter only the characters which were incorrect. Go ahead and enter a corrected **ZIPCODE** now (make up a new number).

NOTE: You may also use the standard up and down cursor keys to go to previous and next fields while editing.

NOTE: If you **EDIT** a **FIELD**, and do not completely fill it, you **MUST** press **(RETURN)** to enter the new data.

Now that the record has been **EDITED** (**ZIPCODE** corrected), we need to write this corrected record over the incorrect one on the disk. To do this, press the **F5 (SAVE)** key to save the corrected record. **MAKE SURE YOU SAVE THE CORRECTED RECORD!** If you do not physically save it, the error will reappear the next time you load this file from the data diskette.

After pressing the **F5** key, the computer will return you to the **REVIEW** mode at the same point you left it (**RECORD #4, "Smith, Mike".**) You have now corrected the **ZIPCODE** on the record of Mike Smith.

If you decide that you do not want to save the corrections you made, or that you want to start over on the **EDITING** of a particular record, then you should press the **F7 (EXIT)** key instead of the **F5** key. This will cancel any editing you have done on that one record and return you to the **REVIEW** section.

DELETING A RECORD

There will be times when you wish to **DELETE** a record from your file. This is easily done using the **DATABASE MANAGER**. From the **REVIEW** mode, move to the record you want to delete using the **F1** and/or **F3** movement keys. When the record you wish to **DELETE** appears, press the **F2 (DELETE)** key. The following screen will appear:

EDIT	
*ARE YOU SURE YOU WISH TO DELETE THIS RECORD?	
ENTER (Y) FOR YES OR (N) FOR NO ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME Smith, Mike	
LAST	FIRST
PHONE 227-7878	ZIPCODE 56340
GRADE 10	G.P.A. 1.98

Do not **DELETE** the record on "Smith, Mike" from the file at this time. If you were absolutely sure you wanted to delete it, however, you would press the "Y" key for "YES". Once you did, this record would have been stricken from the file and there would have been **NO WAY TO BRING IT BACK**. With either response to the question you will be returned to the **REVIEW** mode from which we've been working.

Press "N" for "NO". You will be moved from the **DELETE** mode to the **REVIEW** mode.

Important note: Although a **DELETED** record can no longer be accessed in any way, it is still taking up storage room on your data diskette. To regain the usage of this space you must **PACK** the file as outlined in **CHAPTER TEN — "FILE COMMANDS"** of the Advanced Tutorial.

SELECT/EDIT INDIVIDUAL RECORD

In the first part of this LESSON you were taught how to REVIEW all of the records in your STUDENT file. We will now SELECT an INDIVIDUAL record for REVIEW or EDIT using the second option on the REVIEW/EDIT MENU. Press the F7 (EXIT) key to move you from the REVIEW mode to the REVIEW/EDIT MENU. You now have two options to choose from:

REVIEW/EDIT MENU	
1) REVIEW/EDIT ALL RECORDS 2) SELECT/EDIT INDIVIDUAL RECORD	
SELECT OPTION NUMBER ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____	
LAST	FIRST
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

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Press the #2 (SELECT/EDIT INDIVIDUAL RECORD) key on your keyboard and the following screen will come up:

SELECT	
*SELECT THE FIELD YOU WANT TO FIND A MATCH FOR	
*F1 = PREVIOUS	F5 = SELECT FIELD
*F3 = NEXT	F7 = EXIT
SELECT FIELD	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____ [inverse __ blanks]	
LAST	FIRST
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

Following the words STUDENT'S NAME, the underline has been replaced with a long non-flashing cursor (thick white line). Press the F3 (NEXT) key to move the long non-flashing cursor to the PHONE field. Press the F3 key again until the cursor is on the G.P.A. field. Now move the cursor back to the STUDENT'S NAME field by pressing the F1 (PREVIOUS) key an appropriate number of times.

We will use this method (inverse field cursor) throughout the program to allow you to choose which field you want to work with. Once you have moved the cursor to the proper field, you can press the F5 (SELECT FIELD) key to choose it. In this case, move the cursor to the STUDENT'S NAME field and press the F5 key.

SPECIAL NOTE: Searches done on fields for which a SORT INDEX has been created (LESSONS FOUR and SEVEN) will be accomplished MUCH faster than those done regularly. If you intend to search for a number of individual records using a particular field, it would be a good idea to SORT your file on that field BEFORE entering the SELECT INDIVIDUAL RECORD mode.

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Now that you have selected the field upon which you want to search, the computer will ask you to enter the contents of the field you are looking for. In our case we will be looking for Mike Smith's record. The small flashing cursor should be at the beginning of the STUDENT'S NAME field.

You may choose any one of three formats in which to SEARCH a given field to bring up a record. They are:

- 1) **EXACT FIELD MATCHES** — What you enter in the SEARCH field must EXACTLY match the field on the record, including trailing blanks (the blanks after SMITH, MIKE to the end of the field).
- 2) **BEGINNING FIELD MATCH** — The computer will SEARCH for characters which EXACTLY match the characters you type in BEFORE an asterisk (*). For example, if you type in SMITH*, the computer will bring up both SMITH, STEVEN and SMITH, MIKE.
- 3) **MATCH ANYWHERE (FIRST 15 CHARACTERS)** — Using this format, the characters you enter following an asterisk (*) will be matched with characters in the same order ANYWHERE IN THE FIRST 15 CHARACTERS OF THE FIELD. For example, if you search on *ITH, the computer will once again bring up both SMITH, STEVEN and SMITH, MIKE because they both contain those letters in that sequence.

Let's look for a record using a BEGINNING FIELD MATCH on the STUDENT'S NAME field. You are looking for a particular student named SMITH,, but can't remember what his first name is. Enter, on the STUDENT'S NAME line, "SMITH, *" and press [CR]. (Do not enter the quotation marks.)

SELECT *ENTER THE FIELD YOU WANT TO MATCH	
ENTER FIELD	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME Smith, * 	
LAST	FIRST
PHONE 	ZIPCODE
GRADE 	G.P.A.

The first record to be displayed will be "Smith, Steven" because he is the first record in our file in which the characters match our entry. This, however, is not the "Smith" we were looking for. Press the F3 (CONTINUE SEARCH) key once and the computer will continue searching through the file for another match. The record for "Smith, Mike" should now be displayed on the screen.

SELECT *FOUND MATCH *F2 = DELETE *F3 = CONTINUE SEARCH *F5 = EDIT *F6 = SCROLL DOWN *F7 = EXIT *F8 = SCROLL UP	
ENTER FIELD 	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME Smith, Mike	
LAST	FIRST
PHONE 227-7878	ZIPCODE 56340
GRADE 10	G.P.A. 1.98

Even though this is the record we were looking for, press the F3 key to **CONTINUE** the **SEARCH**. If there are no more records in the file which meet your **SELECT** criteria, (or if there were no matches whatsoever), this screen will appear:

SELECT *THE END OF THE FILE HAS BEEN FOUND *NO FURTHER MATCHES	
PRESS [CR] WHEN READY ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME Smith, Mike	
LAST	FIRST
PHONE 227-7878	ZIPCODE 56340
GRADE 10	G.P.A. 1.98

A **RETURN [CR]** from this screen will return you to the **REVIEW/EDIT MENU**.

Using the power supplied by the **SELECT INDIVIDUAL RECORD** feature, we can find any record in our file with a minimal knowledge of what that record contains.

The use of **CONDITIONALS** (remember you were asked that question at the beginning of the **REVIEW/EDIT** section?) gives us a more expanded and powerful use of the computer's searching capabilities. They will be covered in **LESSON NINE** of the Advanced Tutorial.

EDITING WHILE IN THE SELECT MODE

You may **EDIT** and **DELETE** from the **SELECT** mode by the same process you used while working in the **REVIEW** mode. If you don't remember how, it is covered in the **EDITING A RECORD** section of this lesson.

EXITING THE REVIEW/EDIT MODE

This concludes LESSON THREE on the REVIEW/EDIT capabilities of the MDB. To exit the SELECT mode, press the F7 (EXIT) key. This will return you to the REVIEW/EDIT MENU. Press F7 (EXIT) again and you'll return to the MAIN MENU. From there, QUIT (#8) or continue to LESSON FOUR.

SUMMARY

In LESSON THREE you learned how to:

- 1) Review the RECORDS in your FILE
- 2) Edit a RECORD
- 3) Delete a RECORD
- 4) SELECT/EDIT an individual RECORD

In LESSON FOUR we will learn to SORT the records we have in our FILE so they will be in the proper order when we REVIEW or PRINT them later.

LESSON FOUR — SORT

In this lesson we will be learning how to SORT our file. SORTING the file will put the records in alphabetical or numerical order from low (A or 0) to high (Z to 9). After SORTING the file, we can then review it on the screen or print it out in this new SORTED order.

The SORTING feature allows us to access our information in a more useful order regardless of what sequence it was entered into the computer.

LESSON FOUR will deal with simple SORTING techniques. Saving and retrieving a SORT INDEX, and MULTIPLE SORTS will be covered in LESSON SEVEN of the ADVANCED TUTORIAL.

STARTING UP

If you are continuing from LESSON THREE, skip to the SORTING A FILE section.

If you are NOT continuing from LESSON THREE, follow the procedure for loading the MDB Program as outlined at the beginning of LESSON THREE.

Remember: Press F7 if you panic.

SORTING A FILE

From the MAIN MENU, press the #4 (SORT RECORDS) key to access the SORT MENU. The following will be displayed on your screen:

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SORT MENU	
1) CREATE SORT INDEX	
2) SELECT PREVIOUS SORT INDEX	
3) MULTIPLE SORTS	
SELECT OPTION NUMBER ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____	
LAST	FIRST
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

Press the #1 (CREATE SORT INDEX) key on the keyboard. The following screen will appear:

CREATE SORT INDEX	
*SELECT THE FIELD YOU WISH TO HAVE THE FILE SORTED BY	
*F1 = PREV FIELD	F5 = SELECT FIELD
*F3 = NEXT FIELD	F7 = EXIT
SELECT SORT FIELD	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____ [inverse blanks] _____	
LAST	FIRST
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

To select the field you wish to SORT by, press the F1 (PREV FIELD) key or the F3 (NEXT FIELD) key to move the non-flashing cursor to different fields on the form. In this lesson, we are going to SORT by STUDENT'S NAME, a process which will create an alphabetical SORT INDEX which, when used in relation to our STUDENT file, will give us an alphabetical listing according to the student's last name. Move the cursor so that it is in the STUDENT'S NAME field. Press the F5 (SELECT FIELD) key to select the STUDENT'S NAME field as the one you want to SORT.

The computer will SORT your file at this time. You may note its progress by monitoring the Prompt Line on the screen. The first set of numbers you see are the records being read into the machine. The second sequence delineates those records being placed in SORTED order. The amount of time taken in this SORT routine depends on the size and number of records you have in your file. To a large degree, you are at the mercy of the disk drive you own. Some are faster than others at transferring information.

You will now be asked if you want to save this sorted order to the disk. At this point, there is no need for that, so respond with an "N" to this question. The uses of a saved SORT INDEX will be covered more fully in LESSON SEVEN.

SORT INDEX	
*DO YOU WISH TO SAVE THIS SORT INDEX ON THE DATA DISKETTE?	
ENTER (Y) FOR YES OR (N) FOR NO ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____	
LAST	FIRST
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

Please note that the order of the original file has not changed. A **SORTED INDEX** has been created in the computer's memory which is automatically used in relation to your **STUDENT** file until you **EXIT** the system or load another file. The procedure for saving a **SORTED INDEX** is covered in **LESSON SEVEN**.

IF YOU ENTER MORE RECORDS AFTER SORTING, THE PROGRAM WILL AUTOMATICALLY UPDATE THE SORTED INDEX IN MEMORY WHEN YOU EXIT THE APPEND MODE.

Now that the computer has finished its **SORT**, you should be back to the **SORT MENU**. Press the **F7 (EXIT)** key to return to the **MAIN MENU**.

REVIEWING IN SORTED ORDER

Let's go back to the **REVIEW/EDIT** section to look at our file in **SORTED** order.

Press the **#3** key to bring up the **REVIEW/EDIT MENU**. Select Option **#1 (REVIEW/EDIT RECORDS)**. Because you now are using a **SORT INDEX** in association with the **STUDENT FILE**, you will be asked

if you would like to display the file in SORTED order. Since we now have SORTED the file and do wish to see it in alphabetical order, press "Y" for "YES".

REVIEW	
*DO YOU WISH TO REVIEW THE FILE IN SORTED ORDER?	
ENTER (Y) FOR YES OR (N) FOR NO ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____	
LAST	FIRST
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

The computer will then ask you the question about conditionals. Answer "N" for "NO" to this question.

The REVIEW screen will now be on the screen. Notice that the first record displayed is no longer "Smith, Steven" (the first record we entered), it is now "Dean, Jan". That is because "Dean, Jan" is alphabetically before "Smith, Steven" and we are working in SORTED order.

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REVIEW	
*F1 = PREVIOUS	*F2 = DELETE
*F3 = NEXT	
*F5 = EDIT	*F6 = SCROLL DOWN
*F7 = EXIT	*F8 = SCROLL UP
RECORD NUMBER 2 ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME Dean, Jan	
LAST	FIRST
PHONE 234-4433	ZIPCODE 56349
GRADE 8	G.P.A. 2.76

Notice also that the computer shows you that this is the second record you entered. Press the F3 (NEXT) key and the computer will display the next record in alphabetical order, "Jones, Bill". Press the F3 key several times until you reach the last record in alphabetical order, "Zorro, Alfred". Press the F1 (PREVIOUS) key until you return to the first record, "Dean, Jan". You have now completed a review of your records in alphabetical order by STUDENT'S NAME.

You could just as easily SORT on the ZIPCODE field, GRADE field, or on the student's G.P.A. Try SORTING on the GRADE LEVEL field and review your file before continuing on to LESSON FIVE.

EXITING THE SYSTEM

This completes LESSON FOUR. If you are stopping now, press the F7 (EXIT) key on the REVIEW/EDIT MENU and you will be returned to the MAIN MENU. From there, press key #8 (QUIT) and you will be out of the system.

If you plan to continue, EXIT the REVIEW/EDIT MENU to the MAIN MENU and read on!

SUMMARY

In LESSON FOUR you learned how to:

- 1) SORT the file using an alphabetic or numeric field
- 2) REVIEW the file in SORTED order

LESSON FIVE will teach you how to get a permanent copy of your records using the PRINT function.

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LESSON FIVE — PRINT

In this lesson, we will learn how to PRINT a file in several different ways. If you do not have a printer, skip this lesson completely. It deals only with printer output.

The MDB assumes that you have a Commodore 1525 printer (or a printer with a 1525-compatible interface). If your printer features compressed print or italics, etc., and you want to use these features, it should be set up properly before loading the MDB. Consult your printer owner's manual for the proper procedure.

STARTING UP

If you are continuing from LESSON FOUR, the MAIN MENU should be on the screen. If it is, proceed to PRINTING THE FILE.

If you are NOT continuing from LESSON FOUR, load the MDB program and continue when the MAIN MENU is on the screen. This is the last time you will be reminded to load the program before beginning a lesson. It is also the last time you will be reminded to press F7 in case you get lost within the program.

PRINTING THE FILE

Select Command #5 on the MAIN MENU to bring up the PRINT MENU. Note that there are four options to choose from.

Option #1 — Form Format

We are going to start with Option #1, PRINT IN FORM FORMAT. This option allows you to print the file out just as it appears on the screen (FORM FORMAT). The forms will print out one-at-a-time, and the fields will be filled with your information according to record. They will print consecutively with no attention paid to page breaks.

Press the #1 key to select this option.

PRINT MENU	
1) PRINT IN FORM FORMAT	
2) PRINT IN LIST FORMAT	
3) PRINT IN REPORT FORMAT	
4) PRINT MAILING LABELS	
SELECT OPTION NUMBER 1 ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____	
LAST	FIRST
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

If you are currently working in conjunction with a SORT INDEX, the MDB will ask you the question about printing in SORTED order (LESSONS FOUR & SEVEN). The question regarding CONDITIONALS (LESSON NINE) will always be asked. Answer "N" for "NO" to these questions. This screen will appear:

PRINT FORM	
*ADJUST THE PRINTER	
*[RETURN] = READY	
PRESS [RETURN] WHEN READY ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____	
LAST	FIRST
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

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This prompt screen has been included to remind you to check the status of your printer.

- 1) Is the printer turned on?
- 2) Is the printer cable plugged into the computer?
- 3) Is there paper in the printer (enough to print your file?)
- 4) Is the top of the paper adjusted in the printer?

When you have checked these conditions and everything is ready, press [CR]. This will signal the program that you are ready for it to send the information to the printer.

If your printer is connected correctly and is ready to receive information, it will begin printing out your file (all 5 records) in **FORM FORMAT**. Notice that the whole form is printed on the screen, with the corresponding information for each record filling the fields.

If for any reason you want to **PAUSE** while printing, simply press the "P" key and the printer will be taken "off line". To restart, press the "P" key once again. You will find that this function is sometimes hard to execute. This is due to the nature of the Commodore interrupt process, and is very difficult to overcome. If the printer does not **PAUSE** after the first key depression, wait a few seconds and press it again **TWICE** (if you press it once, you are telling the printer to return to printing from **PAUSE** even though it didn't **PAUSE** in the first place.) If you are persistent, you will be successful.

If you want to stop printing completely, press the **F7 (EXIT)** key.

PRINT FORM *[RETURN] = PAUSE *[RETURN] = CONTINUE *F7 = EXIT PRINTING		
RECORD NUMBER 1 ■		
STUDENT INFORMATION DATABASE		
STUDENT'S NAME _____		
	LAST	FIRST
PHONE _____		ZIPCODE _____
GRADE _____		G.P.A. _____

When the program has finished printing out all of the records in your file, it will return you to the PRINT MENU.

Option #2 – List Format

Let's go to something a little more difficult. Press the #2 key to select the second option, PRINT IN LIST FORMAT.

This option will send the information from each record to the printer in LIST FORMAT. LIST FORMAT is also referred to as a COLUMNAR LISTING because it lists the different fields in columns across the printed page. For example, if we were to list the STUDENT'S NAME field, the ZIPCODE, and the GRADE using this print option, the printout should look like this:

Smith, Steve	56347	7
Dean Jan	56349	8
Jones, Bill	56340	7
Smith, Mike	56340	10
Zorro, Alfred	56351	7

With the **LIST FORMAT** option you can select as few or as many fields to be printed out as you want. The MDB will print out the complete field including any trailing blanks. That is why there is such a distance between the **STUDENT NAME'S** and the **ZIPCODE** on the above listing.

After pressing the #2 key, the program will ask you those two familiar questions concerning displaying the file in sorted order (if you are using a **SORT INDEX**) and entering a conditional. Answer "N" for "NO" to both of these questions. The following screen will appear:

PRINT LIST *SELECT THE FIELD THAT YOU WANT TO HAVE PRINTED *F1 = PREVIOUS F5 = SELECT FIELD *F3 = NEXT F7 = EXIT	
SELECT FIELD	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____	[inverse blanks] _____ <div style="display: flex; justify-content: space-around; width: 100%;"> LAST FIRST </div>
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

Select the first field you want to have printed in the same method as we have selected fields before (by moving the cursor to the field you wish to select and pressing the F5 key).

The first field we want to print out is the **STUDENT'S NAME** field, so move the cursor to that field and press the F5 key to select it. The computer will now ask you "ANY MORE FIELDS TO SELECT". Since we want to print out three fields, **STUDENT'S NAME**, **ZIPCODE**, and **GRADE**, answer "Y" to this question. The above screen will reappear to allow you to select the second field to be printed out. The second

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field is ZIPCODE, so move the cursor to the ZIPCODE field and press the F5 key. Once again, the MDB will ask if there are any more fields to be printed out. Respond with a "Y" for "YES". Move the cursor to the GRADE field and press the F5 key to select it.

You have now finished selecting the three fields for our printout, so answer "N" for "NO" to the question "ANY MORE FIELDS TO SELECT".

The program will ask if the printer is ready as it did in the first print option, PRINT IN FORM FORMAT. Check your printer again, and when it is ready press [RETURN]. It should print out the records in your file just like the printout above. (Press "P" to PAUSE.)

With this option you can print out the fields in any order across the page. For example, you might want to print out the GRADE field first and then the STUDENT'S NAME field. Identify them in the order you wish, and the MDB will take care of the rest!

Upon completion of printing, the program will return you to the PRINT MENU.

Option #3 - Report Format

The production of REPORTS is the most complex, and perhaps the most useful of the four PRINT options. A REPORT is much like printing in LIST FORMAT with these major differences:

- 1) Report Title — An optional Report Title can be generated at the top of each page
- 2) Column Titles — Optional titles can be placed at the top of columns
- 3) Fixed Decimal Digits — You can define how many digits on the right side of the decimal point you want to display in a numerical field
- 4) Page Formatting — Automatic paging in a format you define
- 5) Page Numbering — Automatic page numbering

You will find the flexibility and power of the REPORT option extremely useful and easy to master.

If the REPORT capabilities of this program are not powerful enough for the applications you want to tackle, you may purchase a copy of MIRAGE'S "ADVANCED REPORT GENERATOR" which will work in conjunction with this package. With the "ADVANCED REPORT GENERATOR", you will be able to design reports which are more complex in nature, make calculations in the REPORT mode, and even save the report formats on your Data Diskette.

Press the #3 key from the PRINT MENU to select this option. If you are using a SORT INDEX, the program will ask you if you wish to display the file in sorted order. You will also be asked if you want to enter a conditional statement. Answer "N" for "NO" to both of these questions. The following screen will appear:

PRINT REPORT		
*ENTER THE TITLE OF THE REPORT BELOW		
■		
STUDENT INFORMATION DATABASE		
STUDENT'S NAME _____		
	LAST	FIRST
PHONE _____	ZIPCODE _____	
GRADE _____	G.P.A. _____	

The MDB allows you to enter a title which will be **CENTERED AT THE TOP OF EVERY PAGE** of your REPORT. A title can be up to 35 characters long. If you do not want such a title, just press the [RETURN]. For our purposes, enter the title "STUDENT GRADE POINT AVERAGES" and press [RETURN].

PRINT REPORT	
*ENTER THE TITLE OF THE REPORT BELOW	
STUDENT GRADE POINT AVERAGES ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____	
LAST	FIRST
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

The program will then ask you to select the first field you want to have printed out. Move the cursor to the **STUDENT'S NAME** field and press the F5 key to select it. At this point, the program will ask you for some information concerning this particular field before letting you select the next one.

You must first decide if you want to fix the decimal point on this particular field (**STUDENT'S NAME**). You can select the number of decimal digits you wish to have printed out on the **REPORT**. For instance, requesting 2 decimal digits would print out the number 3.43678 as 3.43. Since our **STUDENT'S NAME** field does not use numbers, answer "N" to this question.

You will next be asked for a column heading for the **STUDENT'S NAME** field. This is a title which will be printed above this particular column. Since this is the **STUDENT'S NAME** field, enter the column heading "**STUDENT'S NAME**". **THE HEADING YOU CHOOSE CANNOT BE WIDER THAN THE LENGTH OF THE FIELD IT IS OVER.** For example, if you were putting a heading over the field **GRADE**, it could be no longer than 2 characters since the length of that field is 2. Note also that headings will be **CENTERED** in the field.

PRINT REPORT *ENTER THE HEADING (IF ANY) BELOW *THE HEADING CANNOT BE LONGER THAN THE FIELD IT IS OVER *NO TITLE = [RETURN]		
STUDENT'S NAME ■		
STUDENT INFORMATION DATABASE		
STUDENT'S NAME _____		
	LAST	FIRST
PHONE _____	ZIPCODE _____	
GRADE _____	G.P.A. _____	

Now that you have given the **DATABASE MANAGER** the necessary information concerning this field, **STUDENT'S NAME**, the program will ask you if there are any more fields you wish to include in this **REPORT**. Answer "Y" for "YES" to this question. Using the cursor, select the "G.P.A." field. Even though this field is numeric, answer "N" for "NO" to the question of fixing the decimal points because all of the numbers were initially entered having the proper number of decimal digits (2). Enter "GPA" for the column heading, since "G.P.A." is six characters long and our field is only four (4) characters wide.

These are the only two fields we want to use on this particular report. Answer "N" for "NO" to the question of **ANY MORE FIELDS**.

The **MDB** will now ask you a few questions concerning the layout of your **REPORT**. The first of these is page width.

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PRINT REPORT	
*PRINTER SET UP *ENTER THE FOLLOWING INFORMATION	
PAGE WIDTH 80 ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____	
LAST	FIRST
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

Enter the number "80" for the page width (as in the example above). This tells the MDB that you want the REPORT centered on an 80 column sheet of paper. You may enter any number from 1 to 250.

Next, you will be asked for the page length of the REPORT. On a standard 8.5" X 11" sheet of paper, there are a maximum of 66 lines to print on. Properly formatted REPORTS have a margin at the top and bottom of the sheet. Enter "56" to tell the computer you want a margin of 5 lines at the top of the page and 5 lines at the bottom. You **MUST HAVE MARGINS**. Do not enter a page length number larger than 64 lines! Whatever number you choose, the program will subtract it from the 66 line maximum and split the number, placing half of the margin at the top and half at the bottom. For now, place the print head of your printer directly over the perforation of the paper. Press RETURN after entering the number.

IMPORTANT NOTE: If you are printing in an 80 column mode, the **TOTAL** of the spaces in the fields you have chosen to include in your REPORT cannot exceed 71-74 characters (depending on the number of fields). This is due to the fact that the program reserves 5 characters for margins (3 on one side, 2 on the other), and 1 character for the

space between fields. If you exceed the 71-74 character limit, the titles will disappear and the contents of the REPORT will begin to "wrap around" to the next line. If you are printing in a 136 column mode, this maximum figure is between 126 and 129 characters.

You have finished entering sufficient information for the program to produce a simple REPORT. You will be asked if the printer is ready and when you answer "Y" for "YES", it will begin. If you wish to PAUSE, press the [RETURN] key.

The REPORT we have generated should look like this:

PAGE 1

STUDENT GRADE POINT AVERAGE

Student's Name	GPA
Smith Steven	3.40
Dean, Jan	2.76
Jones, Bill	3.00
Smith, Mike	1.98
Zorro, Alfred	3.90

Remember, you could have SORTED this file upon any field before you began the REPORT function. With the file sorted, the REPORT generated above would reflect the sorted order.

EXITING THE PRINT MODE

When the printer is finished, you will be returned to the PRINT MENU. From there, you will want to return to the MAIN MENU if you are going to continue with LESSON SIX. If you are NOT going to continue, choose the EXIT function from all menus. DO NOT SKIP STEPS!

This concludes LESSON FIVE on PRINTING out a file. Note that we did not cover Option #4 (PRINT MAILING LABELS). We will leave that to the next lesson, not because it is so difficult, but because our present file does not include fields for ADDRESS, CITY, and STATE, which are obviously necessary to produce mailing labels.

SUMMARY

In LESSON FIVE you have learned how to:

- 1) Print a file in FORM FORMAT
- 2) Print a file in LIST FORMAT
- 3) Define a REPORT and print a file in that FORMAT

This concludes the BEGINNING TUTORIAL section. We recommend that before going on to the ADVANCE TUTORIAL you do the following:

- 1) Go back and review all lessons in the BEGINNING TUTORIAL
- 2) Design and create your own small database
- 3) Enter some sample records on that database
- 4) Review the records in entry order and sorted order
- 5) Print out the file in entry order and sorted order

Work with the commands found in the BEGINNING TUTORIAL until you are completely familiar with them. It may be that at this point the MDB has satisfied your present needs for a database manager. If so, there is no need to continue with the ADVANCED TUTORIAL.

TUTORIAL

ADVANCED TUTORIAL

Welcome to the **ADVANCED TUTORIAL**! With this section of the User's Guide we assume that you are familiar, and have worked extensively with all of the functions detailed in the **BEGINNING TUTORIAL (LESSONS ONE to FIVE)**. Do not attempt to proceed with the **ADVANCED TUTORIAL** until you have mastered the material covered in the first five lessons.

Here in the **ADVANCED TUTORIAL**, we will cover commands that will enable you to print mailing labels, make use of the **DATABASE MANAGER'S** advanced sorting capabilities, place calculated fields in your records, and use conditional statements in your searches. A good deal of time will also be spent outlining the **FILE COMMAND** features of the **DATABASE MANAGER** which include creating subfiles, packing files, merging with other files, and much more.

Each of the five lessons will begin with the following assumptions:

- 1) You have completed all prior lessons
- 2) The MDB program has been loaded properly
- 3) A formatted data disk containing our tutorial files has been inserted
- 4) The **MAIN MENU** is on the screen

You will not always be prompted to press the **RETURN [CR]** key to enter commands, and the procedure for **EXITING** the system will not be outlined. You should be well familiar with those functions by this time.

Continue with the **ADVANCED TUTORIAL**, and **GOOD LUCK!**

LESSON SIX — MAILING LABELS

In order to print labels using the MDB, you must have the following:

- 1) A printer properly interfaced to your Commodore computer
- 2) Mailing labels inserted correctly in the printer (preferably with a tractor feed apparatus).

The program has been written to print labels **EXCLUSIVELY** on 3½" X 15/16" labels in a "one-up" format.

You will be choosing individual fields from your records to place on four available label lines. In order to fit on a standard mailing label (size above), the fields you choose **MUST** conform to these standards:

LINE ONE — Any one field, maximum 32 characters
(10 char/inch mode)

LINE TWO — Any one field, maximum 32 characters
(10 char/inch mode)

LINE THREE — Any one field, maximum 32 characters
(10 char/inch mode)

LINE FOUR — Any three fields

Field #1 (City) — Maximum of 22 characters
(10 char/inch mode)

Field #2 (State) — Maximum of 2 characters
(10 char/inch mode)

Field #3 (Zipcode) — Maximum of 5 characters
(10 char/inch mode)

If you intend to generate mailing labels, and are printing in a standard 10 character/inch mode, you must keep these limits in mind when initially creating your database.

If, for any reason, you must alter the structure of **LINE FOUR** from the 22, 2, and 5 character formats, it is permissible. The three fields you choose may be of **any** size you wish, just so the **TOTAL** of the characters does not exceed 29 characters. For example, if you live in Canada where 7 spaces are required for Postal Codes, you could limit the "City" field to 20 spaces and switch the 2 spaces you've picked-up to the "Zipcode" field. Remember, this must be done when you create your form.

Some dot matrix printers allow the use of alternate typestyles which vary widely in the number of characters/inch. Maximum field lengths can be longer (or should be shorter!) when used in association with one of these alternate fonts. Experiment to test the parameters of your particular printer.

CREATING A NEW FILE

In order to demonstrate the DATABASE MANAGER'S ability to print MAILING LABELS, it is necessary for us to create a new file which includes not only a STUDENT'S NAME field, but ADDRESS, CITY, STATE, and ZIP fields as well.

From the DATABASE MANAGER'S MAIN MENU choose Option #6 (CREATE A NEW FORM). This is the screen which will appear:

CREATE NEW FORM *TYPE FIELD NAME (IF ANY) *F1 = UNDERLINE FOR FIELD LENGTH *F5 = FINISHED CREATING FORM *F7 = EXIT (DO NOT SAVE FORM)
ENTER FORM NOW
<input type="checkbox"/>

Applying the techniques you learned in LESSON ONE, use the following information to CREATE A NEW FORM on your screen:

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FIELD NAME	LENGTH (IN SPACES)
STUDENT'S NAME	25
ADDRESS	32
CITY	16
STATE	2
ZIP	5

Please note that we are staying within the label limitations regarding field length as outlined at the beginning of this lesson. Note also that we do not intend to use all four lines of available label space.

When you are finished, the screen should look something like this:

CREATE NEW FORM *TYPE FIELD NAME (IF ANY) *F1 = UNDERLINE FOR FIELD LENGTH *F5 = FINISHED CREATING FORM *F7 = EXIT (DO NOT SAVE FORM)
ENTER FORM NOW
STUDENT'S NAME _____
ADDRESS _____
CITY _____ STATE ____ ZIP _____
■

When you are sure that your new form is correct, press the F5 key (FINISHED CREATING FORM) to save it. The program will ask you the question about calculated fields before it starts to work. Because there is no need for calculated fields in this lesson, answer "N" for "NO".

The DATABASE MANAGER will now ask you to enter a name for our new form. Type in "LESSON6", as this is the only time we will be using this file. You will be returned to the MAIN MENU.

APPENDING THE FILE

In order to print labels, there must be information in the fields on the records of our new file. Following the **APPEND** procedure as outlined in **LESSON THREE**, press Option #2 (**APPEND FILE**) and the following screen will appear:

APPEND MENU *ENTER THE DATA YOU WISH TO ADD *F1 = PREVIOUS *F2 = FIRST *F3 = NEXT *F4 = LAST *F5 = SAVE *F7 = EXIT	
FIELD NUMBER 1	RECORD NO. 1
STUDENT'S NAME ■ _____	
ADDRESS _____	
CITY _____	STATE _____ ZIP _____

Enter the following information in the appropriate fields of each record:

	STUDENT'S NAME	ADDRESS	CITY	STATE	ZIP
RECORD #1	John Smith	1234 Sample Ave.	Santa Clara	CA	95051
RECORD #2	Mary Jones	987 Main St.	Greeley	CO	80631
RECORD #3	Joe Computer	28 Central Blvd.	Albany	GA	31705
RECORD #4	Red Gray	5678 First St.	Flushing	NY	11354
RECORD #5	Andrew Tubb	3117 Pine	Chicago	IL	60601

Remember to **SAVE** each record by pressing the **F5 (SAVE)** key before proceeding with the next entry. If you are having any difficulties with **APPENDING** your file, consult **LESSON TWO**.

After saving **RECORD #5**, press **F7** to **EXIT** the **APPEND** mode. You will be returned to the **MAIN MENU**.

PRINTING MAILING LABELS

From the **MAIN MENU**, choose Option #5 (**PRINT RECORDS**). This will bring you to the **PRINT MENU** from which you should select #4, the option which facilitates the printing of **MAILING LABELS**.

If you had sorted this file previously or had loaded a saved **SORT INDEX** to be used in conjunction with it, the program would now ask you if you want to **PRINT** your **LABELS** in sorted order. Most of the time you will use a **ZIPCODE-order** sort for mailing labels.

The **DATABASE MANAGER** will now ask if you want to place a conditional statement on the printing of your labels. For example, you could tell it to print out labels for all **ZIPCODES** greater than "49999". We are not interested in printing labels conditionally, so press "N" for "NO".

The following **PRINT LABEL** menu will appear:

PRINT LABEL	
*SELECT THE FIELDS FOR THE LABEL	
*F1 = PREVIOUS	*F5 = SELECT
*F3 = NEXT	*F7 = SKIP LINE
SELECT LABEL LINE ONE FIELD	
STUDENT'S NAME _____ [inverse blanks] _____	
ADDRESS _____	
CITY _____	STATE _____ ZIP _____

The program is asking you to select the field you want to be printed on **LABEL LINE ONE**. To make your choice, move the solid white line to the field you desire (using the **F1** and/or **F3** keys), and press **F5** to **SELECT** it. You may only choose one field to be printed on this line.

Remember, if you choose a field with more than 32 characters (at 10 char/inch) the entire field will not fit on the label at print time! If you do not want **ANYTHING** to print on **LABEL LINE ONE**, press the F7 (SKIP LINE) key. Because all of our example labels will be only three lines long, press the F7 key to SKIP LABEL LINE ONE.

The program will now ask you the same question for **LABEL LINE TWO**. Because the solid white line is currently in the **STUDENT'S NAME** field, push F5 to select it as the field we want to place on **LABEL LINE TWO**.

We now want to place our **ADDRESS** field on **LABEL LINE THREE**. Move the solid white line to the **ADDRESS** field using the F3 key. Press the F5 (SELECT) key to tell the program you want it on **LABEL LINE THREE**.

LABEL LINE FOUR is a little more tricky. Note that the prompt line now reads:

SELECT CITY FIELD

Move the solid white line to our **CITY** field and press F5. In doing this, you have placed our **CITY** field on the first part of **LABEL LINE FOUR**. It made no difference what our field was named, only that we selected it to be on the first part of this line. Fields chosen here should be no longer than 22 characters in order to fit on the label. The prompt line will now read:

SELECT STATE FIELD

Move the solid white line to our **STATE** field. Press F5 to **SELECT** it as the field which will be placed on the second part of **LABEL LINE FOUR**. Fields chosen here should be no longer than 2 characters. The prompt line will now read:

SELECT ZIPCODE FIELD

In the same manner as you've done before, move the solid white line to our **ZIP** field and press F5 to **SELECT** it as the field which will be printed on the last part of **LABEL LINE FOUR**.

You are finished giving the DATABASE MANAGER all of the information it needs to produce standard mailing labels. A screen will now appear asking you if you are ready to begin printing. If you want to start, make sure that the head of the printer is positioned at the top left hand corner of a label. With this, and all of the other standard printer-conditions taken care of, press [RETURN]. If you change your mind and decide not to print at this time, simply press the F7 key and you will be returned to the PRINT MENU.

Your printer will now begin printing labels using the information from your database. If you wish to pause momentarily to adjust the labels, this can be done by taking the printer "off line". Press the [RETURN] key and the printer will PAUSE for adjustment. Press [RETURN] again to continue. As we mentioned in LESSON FIVE, this can be tricky, so be persistent.

When the printer has completed printing your labels, you will be returned to the PRINT MENU from which you can exit the program.

SUMMARY

In LESSON SIX you have learned how to:

- 1) Define which fields you want to include on your label
- 2) Print labels using your database

In LESSON SEVEN we will pick-up where LESSON FOUR left off in relation to sorting. In this ADVANCED SORTS lesson, you will learn how to set up a SORT INDEX and how to do MULTIPLE SORTS.

LESSON SEVEN — ADVANCED SORTS

LESSON FOUR of the BEGINNING TUTORIAL taught you how to SORT a file according to the alphabetic or numeric value of a field you had selected. The power of such a feature should be quite obvious to you by this time. Alphabetizing your customer, student, or inventory list for review was a simple matter, and placing your mailings in zipcode order should have been a breeze.

At the same time, however, you undoubtedly ran across some of the unavoidable limitations of a simple SORT such as we outlined in LESSON FOUR. LESSON SEVEN fills in the gaps, giving you all of the tools necessary for accomplishing even the most difficult tasks.

Using only the information supplied in LESSON FOUR, you could not save on your data diskette the SORT INDEX which had been created. This meant that each time you wanted to SORT your file you had to start from scratch. In this lesson you will be taught how to store, and update your SORT INDEX so it can be accessed immediately in relation to the future reviews and printouts of its accompanying file.

The procedure for accomplishing MULTIPLE SORTS was also skipped in favor of its inclusion in this more advanced lesson. Using MULTIPLE SORTS, you can place a file in order by one field then turn around and SORT it by another. For example, a file could first be sorted alphabetically by name, then numerically by GRADE level. The finished listing would read sequentially according to GRADE, with names in alphabetic order within like GRADE level areas. You can SORT as many times (as deeply) as you desire.

There are many functions of the DATABASE MANAGER in which files can be manipulated in SORTED order. You will be given NONE of these options (see none of these prompt screens) unless you either load a SORT INDEX from the diskette or create one after loading a file.

The whole procedure will be made clear as we attack this lesson.

SORTING A FILE (CREATING A SORT INDEX)

From the MAIN MENU, choose Option #1 (SELECT FILE). The file we will be manipulating in this lesson is the file we created in the BEGINNING TUTORIAL named STUDENT. Type-in STUDENT [CR], and you will be returned to the MAIN MENU. SORT (Option #4) the STUDENT file as you learned to do in LESSON FOUR. Use as your SORT field the one we entitled STUDENT'S NAME.

IN DOING THIS SORT, THE ENTRY ORDER OF YOUR STUDENT FILE IS NOT CHANGED. A SORT INDEX is created which, when used in conjunction with the STUDENT file, tells the program how to place the file in alphabetical order with the STUDENT'S NAME field as a guide. This SORT INDEX will reside ONLY IN THE COMPUTER'S MEMORY unless it is saved to your Data Diskette. If you do not save it, you may only review/edit or print the STUDENT file using this SORT INDEX as a reference as long as the computer is on and the STUDENT file is active. IF YOU BEGIN TO USE ANOTHER FILE, OR TURN THE COMPUTER OFF, the SORT INDEX will be lost.

SAVING A SORT INDEX

If you DO save the SORT INDEX to your Data Diskette, you will be able to call it back later to be used in association with your STUDENT file. This will save you the time of having to re-sort your file in the future.

When the SORT is completed, the following screen will appear:

SORT FILE *DO YOU WISH TO SAVE THIS SORT INDEX TO THE DATA DISKETTE?	
ENTER (Y) FOR YES OR (N) FOR NO ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____	
LAST	FIRST
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

We want to save this **SORT INDEX** to our Data Diskette (make sure it is the same diskette as your **STUDENT** file is on), so press "Y" for "YES". You do not have to name your **SORT INDEX** — the **DATABASE MANAGER** will take care of that.

If the file you are **SORTING** is large, there may not be enough room on your Data Diskette for the **SORT INDEX**. If this is the case, a "Disk Error" message will appear in the Prompt Line of the screen. An error number will be indicated, and you may reference it by consulting your disk drive Owner's Manual. To clear the error, simply press [RETURN]. You will be returned to the **MAIN MENU** in a "No File" status.

You may create a **SORT INDEX** for **EACH** of the fields in your database if you so desire. The program will keep them all straight and apply them at your command.

Because you were taught how to review a file in **SORTED** order in **LESSON FOUR**, we will not go over that procedure at this time. **EXIT** from the **SORT MENU** to the **MAIN MENU**.

UPDATING A SORT INDEX

When you SORTED the STUDENT file, you placed in alphabetic order (according to STUDENT'S NAME) all records CURRENTLY RESIDING IN THE DATABASE. What about the records which are added AFTER the SORT? Are they just added to the bottom of the list?

In LESSON FOUR, you learned that if you APPEND a file which is currently being used in conjunction with a SORT INDEX, the SORT INDEX IN USE WILL AUTOMATICALLY BE UPDATED TO INCLUDE THE NEW ENTRIES, PLACING THEM IN THE CORRECT ALPHABETIC OR NUMERIC ORDER WITH THE REST OF THE INDEX.

Let's take a look at how it works. From the MAIN MENU, choose Option #2 (APPEND FILE). In the append mode, enter a couple of new STUDENT'S NAMES. The instant you EXIT (F7) the append mode, your SORT INDEX in memory will be updated. (When you EXIT the DATABASE MANAGER program entirely, the SORT INDEX on your Data Diskette will automatically be updated.) Move to the REVIEW/EDIT mode from the MAIN MENU and review your file. You will find the above to be a fact. Return to the MAIN MENU.

IMPORTANT NOTE: AFTER YOU HAVE APPENDED YOUR FILE, ALL SORT INDEXES NOT IN USE AT THE TIME OF THE APPEND (THOSE ON THE DATA DISKETTE) WILL BE RENDERED USELESS, AND MUST BE RECREATED. You will be able to access these INDEXES, but they will give you invalid results.

The SORT INDEX on the Data Diskette which IS in use at the time of the APPEND will be updated permanently when you either SELECT or CREATE another file or EXIT the program.

RECALLING A SORT INDEX

We are now going to enter the program as if we were just beginning our day's work. In accessing our STUDENT file this time, however, we will be also loading the SORT INDEX we created on the STUDENT'S NAME field.

Press Option #1 (SELECT FILE) from the MAIN MENU and enter STUDENT as the file you want to manipulate. When you are returned to the MAIN MENU, select Option #4 (SORT FILE) to begin the procedure for choosing a SORT FILE from the Data Diskette. The screen will look like this:

SORT MENU 1) CREATE SORT INDEX 2) SELECT PREVIOUS SORT INDEX 3) MULTIPLE SORTS
SELECT OPTION NUMBER ■

It is our desire to load a SORT INDEX from our data diskette, so choose Option #2 (SELECT PREVIOUS SORT INDEX). This screen will appear:

SELECT SORT INDEX *SELECT THE FIELD OF THE SORT INDEX YOU WISH TO USE *F1 = PREV FIELD *F5 = SELECT *F3 = NEXT FIELD *F7 = EXIT	
SELECT THE FIELD	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____	[inverse blanks] _____ LAST FIRST
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

Now, in the manner we've used a number of times before, move the solid white bar to the field for which you want to find a previously-created **SORT INDEX**. When you get to the right field, press the F5 (**SELECT**) key to register your choice with the program. The **DATABASE MANAGER** will search your data diskette for a **SORT INDEX** on that field. If it finds one, it will load it (note the counter), and return you to the **MAIN MENU**.

If it does not find a **SORT INDEX** for the field you've chosen, a "disk error" number will be displayed in the prompt line. A description of what these disk error numbers represent is included in your disk drive owner's manual.

If you ever get a disk error, press **RETURN [CR]** and you will be returned to the **MAIN MENU** to start over. Because all of your files have automatically been closed, it will be necessary for you to re-select a file using Option #1.

Move the solid white bar to the **STUDENT'S NAME** field and press the F5 key. The **SORT INDEX** we created on that field in the earlier section of this lesson will be loaded into the program and you will be

returned to the **MAIN MENU**. To check this, move to the **REVIEW/EDIT** mode and take a look at your records. They will be displayed in alphabetical order.

If you want to load a **SORT INDEX** different from the one currently in use, you do not have to completely exit the program. Follow the procedure detailed above, and the new **SORT INDEX** will be loaded into your computer's memory erasing the one which had been resident.

This completes the section of this lesson concerning the creation, saving, and retrieving of **SORT INDEXES**. Return to the **MAIN MENU** in preparation for the **MULTIPLE SORT** section.

MULTIPLE SORTS

Files may be **SORTED** as many times as you wish **WITHIN THE SAME INDEX**: e.g., a **MULTIPLE SORT** can be performed creating a **SORT** within a **SORT**. Ultimate **SORT** priority will be given to the last **SORT** which is conducted.

Here's an example: The students comprising our **STUDENT INFORMATION DATABASE** were entered in random order during tutorial **LESSON TWO**. They were stored on the data diskette in this fashion:

Smith, Steve	222-3439	56345	7	3.40
Dean, Jan	234-4433	56349	8	2.76
Jones, Bill	222-1222	56340	7	3.00
Smith, Mike	227-7878	56340	10	1.98
Zorro, Alfred	222-2345	56351	7	3.90

A simple **SORT** on the **GRADE** field as detailed in **LESSON FOUR** would render a listing like this:

Smith, Steve	222-3439	56345	7	3.40
Jones, Bill	222-1222	56340	7	3.00
Zorro, Alfred	222-2345	56351	7	3.90
Dean, Jan	234-4433	56349	8	2.76
Smith, Mike	227-7878	56340	10	1.98

A **MULTIPLE SORT**, however, on first the alphabetic **STUDENT'S NAME** field, then on the numeric **GRADE** field, would yield a listing such as this:

Jones, Bill	222-1222	56340	7	3.00
Smith, Steve	222-3439	56345	7	3.40
Zorro, Alfred	222-2345	56351	7	3.90
Dean, Jan	234-4433	56349	8	2.76
Smith, Mike	227-7878	56340	10	1.98

The records are now in alphabetic order according to **STUDENT'S NAME** within like **GRADE** levels. Note that the final **SORT** we did, that focusing on the **GRADE** level, is the one which received ultimate priority.

CREATING A MULTIPLE SORT INDEX

From the **MAIN MENU**, choose Option #4 (**SORT RECORDS**) to bring up the **SORT MENU**. **MULTIPLE SORTS** is the option we wish to take, so press the #3 key to relay that choice to the program. This screen will appear:

MULTIPLE SORTS
 *SELECT THE FIELD TO BE SORTED
 *F1 = PREV FIELD *F5 = SELECT
 *F3 = NEXT FIELD *F7 = EXIT

SELECT SORT FIELD

STUDENT INFORMATION DATABASE

 STUDENT'S NAME _____ (inverse blanks)

LAST

FIRST

 PHONE _____ ZIPCODE _____
 GRADE _____ G.P.A. _____

You are being asked to delineate the field upon which you want the first SORT to be done. We want our first SORT to be done on the STUDENT'S NAME field, so move the long white bar there and press the F5 key to SELECT it. The DATABASE MANAGER will quickly SORT the records alphabetically and reveal this new screen:

MULTIPLE SORTS		
*ANY MORE FIELDS TO SELECT?		
ENTER (Y) FOR YES OR (N) FOR NO ■		
STUDENT INFORMATION DATABASE		
STUDENT'S NAME _____	LAST	FIRST
PHONE _____	ZIPCODE _____	
GRADE _____	G.P.A. _____	

It is our desire to SORT by one more field (the GRADE field), so press "Y" for "YES". The screen which allows us to choose a field for SORTING will now appear. Move the long white bar to the GRADE field and press the F5 (SELECT) key. The computer will quickly SORT the records to GRADE order, retaining as a foundation the alphabetic format we developed in our first sort.

When the GRADE SORT is completed, the program will ask if we want to SORT once again. We do not, so press the "N" for "NO" key. You will be returned to the normal SORT INDEX sequence at the point in which you are asked if you want to save to diskette this new (MULTIPLE) SORT INDEX. From here on out, the DATABASE MANAGER treats this (MULTIPLE) SORT INDEX in the same manner as any other SORT INDEX with one notable exception. WHEN APPENDING YOUR FILE WITH A MULTIPLE SORT INDEX IN USE, ONLY THE LAST

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SORT (in this case the **GRADE SORT**) **WILL BE UPDATED**. If you have added any records to your file since last performing a **MULTIPLE SORT**, it must be sorted once again.

Do not save this file to your data diskette. Move instead through the **MAIN MENU** to the **REVIEW/EDIT** mode where you can check your work (and the program's work) against the list above. They should match identically. Once satisfied, move to the **MAIN MENU** if you plan to continue, or **QUIT** the program if you do not wish to continue.

SUMMARY

In **LESSON SEVEN** you learned the proper procedure for:

- 1) Creating a **SORT INDEX**
- 2) Saving a **SORT INDEX** to your data diskette
- 3) Updating a **SORT INDEX**
- 4) Creating a **MULTIPLE SORT INDEX**

In the next section of this, the **ADVANCED TUTORIAL**, you will be taught the finer points of creating **CALCULATED FIELDS** — fields whose contents are dependent on the values of the accompanying report fields.

LESSON EIGHT — CALCULATED FIELDS

In LESSON ONE you were taught how to design a form which was comprised of various fields of information. Each field stood on its own; e.g., the value placed in it was not dependent in any way on the values of the other fields on the form.

Here in LESSON EIGHT you will be taught how to design a form with fields whose values DO depend on the values of the other fields on the form. These are CALCULATED FIELDS, and they are an invaluable tool in many of the applications to which the DATABASE MANAGER can be put.

Take, for instance, this educational application: You are a teacher who gives ten (10) tests every semester. The ten tests are averaged at the end of this grading period to give one final grade which is placed on a report card. Using the DATABASE MANAGER, you could set-up a form which included fields for ten test scores, an eleventh (11th) field for the number of tests administered so far, and a twelfth (12th) which automatically adds the values of the first ten fields, divides them by the eleventh, and places that value in the twelfth. Two of these fields are CALCULATED FIELDS into which you would NEVER have to physically place information. The program would do it for you!

Calculations which are valid for you to use are EXACTLY THE SAME as those used in the standard BASIC computing language. If you are not familiar with BASIC mathematical operations and functions, it may be wise to brush up on them before continuing with this lesson. Consult a good BASIC reference manual.

Using the concept of a "LET" or "EQUAL" statement, you will be forming an equation with one variable to the left of an equal (=) sign, followed by an arithmetic operation or function on the right. The only time you will have to worry about CALCULATED FIELDS is in the creation of a form. At no other point in the program will you be required to manipulate them in any manner.

The best way to explain how it all works is to dive into LESSON EIGHT — the tutorial on CALCULATED FIELDS.

ENTERING THE FORM

In this lesson we will be creating a file which could be used to keep track of sales invoices in a small retail business. There will be one field for the CUSTOMER, three fields for ITEMS PURCHASED, a SUB-TOTAL, a field for TAX, and a final field for the grand TOTAL. The SUBTOTAL, TAX, and TOTAL fields will all be CALCULATED FIELDS.

Our first order of business is to create a new file which includes these seven fields. From the DATABASE MANAGER'S MAIN MENU choose Option #6 (CREATE NEW FORM). This is the screen which will appear:

CREATE NEW FORM *TYPE FIELD NAME (IF ANY) *F1 = UNDERLINE FOR FIELD LENGTH *F5 = FINISHED CREATING FORM *F7 = EXIT (DO NOT SAVE FORM)
ENTER FORM NOW
<input type="checkbox"/>

Applying the techniques you learned in LESSON ONE, use the following information to create a new form on your screen. Do not worry about the CALCULATED FIELDS at this time, they will be handled when we finish entering the entire form.

FIELD NAME	LENGTH (IN SPACES)
CUSTOMER	31
ITEM #1	7
ITEM #2	7
ITEM #3	7
SUBTOTAL	9
TAX	9
TOTAL	9

When you are finished, the screen should look something like this:

CREATE NEW FORM

*TYPE FIELD NAME (IF ANY)

*F1 = UNDERLINE FOR FIELD LENGTH

*F5 = FINISHED CREATING FORM

*F7 = EXIT (DO NOT SAVE FORM)

ENTER FORM NOW

CUSTOMER _____

ITEM #1 _____

ITEM #2 _____

ITEM #3 _____

SUBTOTAL _____

TAX _____

TOTAL _____ ■

Let's look for a moment at the logic behind why we created the monetary fields in seven (7) and (9) character lengths. ITEM fields #1, #2, and #3 were set at seven digits in order to facilitate a sales price of four spaces for DOLLAR values, a decimal point, and two spaces for CENT values (example: "1498.65"). We could have reserved five, six, seven, or more spaces for the DOLLAR value, but most purchases will not exceed the \$9,999.99 mark.

The reasoning behind our choice of a 9 character length for the last three fields is a little more tricky, but **VERY IMPORTANT!** The highest possible **DOLLAR** total of the three **ITEM** fields is "29999". We would, therefore, need to have a total of eight (8) spaces in each of the last three fields to accomodate the totals (5 for **DOLLARS**, 1 for the decimal point, and 2 for **CENTS**). We have defined them to have nine (9). Why?

ANY CALCULATED FIELD MUST BE ONE SPACE LONGER THAN THE HIGHEST POSSIBLE TOTAL IN ORDER TO ACCOMODATE A PLUS (+) OR MINUS (-) SIGN WHICH THE PROGRAM GENERATES.

ENTERING THE CALCULATIONS

When you are sure that your new form is correct, press the F5 key (**FINISHED CREATING FORM**) to save it. The following screen will appear:

CREATE NEW FORM	
*DO YOU WISH TO ENTER ANY CALCULATED FIELDS?	
ENTER (Y) FOR YES OR (N) FOR NO ■	
CUSTOMER	_____
ITEM #1	_____
ITEM #2	_____
ITEM #3	_____
SUBTOTAL	_____
TAX	_____
TOTAL	_____

We do want to enter some **CALCULATED FIELDS**, so press "Y" for "YES". The following screen will appear:

CREATE NEW FORM ENTER YOUR EQUATION BELOW *F1 = PREVIOUS *F5 = SELECT FIELD *F3 = NEXT *[RETURN] = FINISHED	
CUSTOMER _____ [inverse blanks] _____	
ITEM #1 _____	
ITEM #2 _____	
ITEM #3 _____	
SUBTOTAL _____	
TAX _____	
TOTAL _____	

FORMULAS CAN BE NO LONGER THAN 50 CHARACTERS.

You may enter a maximum of 25 different formulas for each form you create. **THEY WILL BE PERFORMED BY THE PROGRAM IN THE ORDER YOU ENTER THEM.** In this example, we have four separate calculations which must occur. They are:

- 1) Add the total of the three ITEM fields, giving us the SUBTOTAL
- 2) Multiply the SUBTOTAL by ".06", giving us the TAX (in some states)
- 3) Round the TAX field to a two digit CENT figure
- 4) Add the SUBTOTAL and TAX fields, giving us the TOTAL

We must enter these calculations in **EXACTLY** this order because the program begins with the first and works to the last. If we mix them up, the figures we come up with will be incorrect.

CALCULATION #1:

Add the total of the three ITEM fields, giving us the SUBTOTAL

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Using the F3 (NEXT) key, move the long white bar from the CUSTOMER field to the SUBTOTAL field. Note that the small flashing cursor stays on the prompt line where your calculation will appear. Using the F5 key, choose SUBTOTAL as the field which will be calculated. The prompt line will now look like this:

```
f$(5) ■
```

This is the DATABASE MANAGER'S way of representing the fifth blank (SUBTOTAL) on our form. The CUSTOMER field is "f\$(1)"; ITEM #1 is "f\$(2)"; etc., right on through to the TOTAL, which is "f\$(7)".

The flashing white cursor will be right after the last parenthesis. Using the keyboard, type an "=" sign after the parenthesis. The prompt line will now look like this:

```
f$(5) = ■
```

What we enter on the right side of the equal (=) sign will become the value to be placed in the SUBTOTAL field. (Note: for those of you familiar with the use of BASIC variables, the dollar sign does NOT indicate a STRING VARIABLE in this program.)

Using the F1 key, move the long white cursor to the ITEM #1 field. Choose this field using the F5 (SELECT) key. The prompt line will now look like this:

```
f$(5) = f$(2) ■
```

In BASIC mathematical calculations, the following symbols stand for the accompanying functions:

- 1) Plus Sign (+) = "Plus" or "In Addition To"
- 2) Minus Sign (-) = "Minus" or "Subtracted From"
- 3) Asterik (*) = "Times" or "Multiplied By"
- 4) Slash (/) = "Divided By"

(For further help consult a good BASIC reference manual.)

Press the plus (+) key. It will add a plus sign to our equation.

f\$(5) = f\$(2) + ■

Now move the long white cursor to the ITEM #2 field and push F5 to select it. Add another plus (+) sign to the formula. Conclude by moving the long white cursor to the ITEM #3 field and pressing F5 to select it. The prompt line should look like this:

f\$(5) = f\$(2) + f\$(3) + f\$(4) ■

If you have made a mistake, use the delete (DEL) key to back through the formula to the error. Redo the formula from that point. Note: If you feel familiar enough with the format we are using, you may type in the formula completely from the keyboard without using the SELECT feature.

Here's what you've said to the program: In field #5, place the total of fields #2, #3, and #4. When you enter ANY amount in these fields now, it will be reflected in the SUBTOTAL.

If the calculation looks exactly like the one above, press the RETURN [CR] key to enter it. You will be asked if you wish to enter another calculation. Answer "Y" for "YES".

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CALCULATION #2:

Multiply the SUBTOTAL by ".06", giving us the TAX (in California)

Move the long white bar to the TAX field using the F3 (NEXT) key. Press F5 to SELECT that field as the one which will receive the calculation. It will appear in the prompt line:

f\$(6)■

Type in an equal (=) sign from the keyboard.

f\$(6) = ■

Because we want to multiply the value of the SUBTOTAL field by .06, move the long white cursor to the SUBTOTAL field and SELECT it with the F5 key.

f\$(6) = f\$(5)■

Now press the asterik (*) key meaning that you want to "multiply by". Finish up the equation by entering our tax multiplication factor, ".06". The prompt line should look like this:

f\$(6) = f\$(5)*.06■

You are telling the program to multiply the contents of the SUBTOTAL field by .06 and place the answer in the TAX field.

If your formula looks exactly like the one in the prompt line above, press the RETURN [CR] key to enter it. You will be asked if you want to enter another calculation. Answer "Y" for "YES".

CALCULATION #3:

Round the TAX field to a two-digit CENT figure

In any multiplication or division calculation, there is a chance that the final figure will be returned with more than two digits to the right side of the decimal point. Using a BASIC mathematical function for rounding, this problem can be overcome. We will not seek to give you the logic behind the maneuver (we will leave that to a BASIC manual), but will ask, instead, that you enter it by rote — character by character. We include it as an example of the mathematical power that the DATABASE MANAGER can accomodate.

Move the long white cursor to the TAX field once again. Press the F5 key to select it as the field upon which you want to calculate. Note: This does not REPLACE CALCULATION #2; it is performed immediately following the completion of that one. The prompt line will look like this:

```
f$(6)■
```

Now type in characters between these quotes EXACTLY as they are presented: "=int(f\$(6)*100+.5)/100". This is the formula which will get rid of the undesired digits and round the final figure off. Your prompt line should read thusly:

```
f$(6)=int(f$(6)*100+.5)/100■
```

If your formula matches this one EXACTLY, press the RETURN [CR] key to enter it in the program. In response to the question asking if you want to enter any more CALCULATED FIELDS, answer "Y" for "YES". We have one to go.

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CALCULATION #4:

Add the SUBTOTAL and TAX fields, giving us the TOTAL

The fourth calculation we must perform is the easiest of them all. If you've made it this far, you've got it licked. Move the long white cursor to the last field which is TOTAL. SELECT it as the field in which to place a CALCULATION by pressing the F5 key.

Put in an equal (=) sign from the keyboard, and move the long white cursor to the SUBTOTAL field in order to SELECT it. Press F5. Add a Plus Sign (+) from the keyboard, and move the long white cursor to the TAX field using the F3 (NEXT) key. SELECT it. Your prompt line should now read:

f\$(7) = f\$(5) + f\$(6) ■

If it does, press the RETURN KEY to enter it in the program. You will once again be asked if you want to enter another CALCULATED FIELD. Since you don't, press "N" for "NO".

REVIEWING CALCULATED FIELDS

You are finished entering the CALCULATED FIELDS in your new form. The program will return you to the CREATE FORM sequence to which you are accustomed. Name your file "CALC", and return to the MAIN MENU. Note that the word "CALC" appears after the "FILE:" prompt in the upper right hand corner of the screen, meaning it is the file currently in use. From the MAIN MENU, choose Option #2 (APPEND FILE). This form will appear on the screen:

APPEND MENU	
*ENTER THE DATA YOU WISH TO ADD	
*F1 = PREVIOUS	*F2 = FIRST
*F3 = NEXT	*F4 = LAST
*F5 = SAVE	*F7 = EXIT
FIELD NUMBER 1	RECORD NUMBER 1
CUSTOMER ■ _____	
ITEM #1	_____
ITEM #2	_____
ITEM #3	_____
SUBTOTAL	_____
TAX	_____
TOTAL	_____

We will not spend a lot of time entering information, but it is important for you to try your hand at placing **NUMERICAL** figures in the **ITEM #1**, **ITEM #2**, and **ITEM #3** fields. It makes no difference what column you enter them in. The program will automatically move them all the way to the right when you leave the field. Any number, period, or minus (-) sign can be correctly used in a field such as this.

When you enter numbers in any **ITEM** field, notice that the last three fields (**SUBTOTAL**, **TAX**, & **TOTAL**) automatically fill with the appropriately calculated figures. It makes no difference how many times you change the values of the **ITEM** fields, the program will instantly keep your calculated fields up to date. When you've entered the information you desire, press the **F5** key to **SAVE** the record.

LESSON EIGHT

TUTORIAL

IMPORTANT NOTES:

- 1) A field containing solely alphabetical characters will return a value of "0" when used in association with a **CALCULATED FIELD**.
- 2) If a field with mixed alphabetic and numeric values is used in association with a **CALCULATED FIELD**, it will return a literal numeric value up to the point where the first alphabetical character is encountered.
- 3) If you execute either the **MERGE** or **REPLACE** functions in relation to a **CALCULATED FIELD**, the **CALCULATED FIELD** will **NOT** re-calculate. To do so, you must move to the **EDIT** mode and press [RETURN] in that field for each record. They will re-calculate at that time.

This concludes **LESSON EIGHT** on **CALCULATED FIELDS**. You may exit out of the **APPEND** mode to the **MAIN MENU**.

SUMMARY

In **LESSON EIGHT** you have learned how to:

- 1) Compose a form using **CALCULATED FIELDS**
- 2) Place information in those fields using the **APPEND** mode

In **LESSON NINE** you will be taught how to search using **CONDITIONALS** — true/false decisions made by the computer in regards to your records.

LESSON NINE — CONDITIONALS

In LESSON THREE you learned the correct procedure for REVIEWING your records according to the order in which they were entered. In LESSON SIX you were taught the procedure for doing the same function, sending the output to a printer instead of to a screen. Now it's time to learn how to use the CONDITIONAL function of the MIRAGE DATABASE MANAGER — a feature which allows you to define CONDITIONS against which the computer will make true/false decisions in regards to your records.

With CONDITIONALS, you will be able to review your database selectively; e.g., draw from it only the records which satisfy certain criteria which you have defined beforehand. Output can be sent to the screen (REVIEW) or to the printer (PRINT). You can be as complex in setting your conditions as you desire, limited only by the fact that the statement can be no longer than 70 characters.

Here are some examples of CONDITIONAL statements used in accordance with our original STUDENT INFORMATION DATABASE:

- 1) Students with names greater (alphabetically) than "Jones, Bill"
- 2) Students in zipcode areas between "50000" and "60000"
- 3) Students in the "10"th grade

The DATABASE MANAGER is completely compatible with all of the CONDITIONAL statements commonly used in the BASIC computer language. The standard "IF/THEN" function provides the foundation upon which all of the capabilities are built, and an understanding of its purpose and usage is essential in taking full advantage of the DATABASE MANAGER'S capabilities. If you are not familiar with "IF/THEN" statements, consult your 64 User's Guide or a general reference book on the BASIC computing language. A thorough knowledge of more advance BASIC functions such as "MID\$" and "VAL" is not necessary, although it will enhance the power of the MDB.

CONDITIONAL STATEMENTS may NOT be saved on your Data Diskette. They must be entered anew upon each application.

ENTERING A CONDITIONAL

The DATABASE MANAGER'S MAIN MENU should be on the screen at this time. Let's use the STUDENT file from your data diskette which we created during the BEGINNING TUTORIAL. Press Option #1 (SELECT FILE) and type in STUDENT. You will be returned to the MAIN MENU.

In order to enter a CONDITIONAL statement, you must be in either the REVIEW/EDIT mode or the PRINT mode. They both work in exactly the same manner. For the sake of our demonstration, choose Option #3 (REVIEW/EDIT) from the MAIN MENU. This screen will appear:

REVIEW/EDIT MENU	
1) REVIEW/EDIT RECORDS 2) SELECT/EDIT INDIVIDUAL RECORD	
SELECT OPTION NUMBER ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____	
LAST	FIRST
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

In relation to CONDITIONALS, Option #2 would be an invalid entry (since that would select only an individual record). Your only choice, therefore, is Option #1.

If you were currently using a SORT INDEX in relation to this STUDENT file, a screen would appear asking if you want to use it in this situation. You may recall from LESSON FOUR on SORTING that you can put your records in alphabetic or numeric order (depending upon the field) using this option. SORTS and CONDITIONALS can be used

in unison, rendering a listing which is selectively in order. For example, you may want to produce an alphabetical listing of all students in the 8th grade. You would SORT on the STUDENT NAME field, and place a CONDITIONAL on the GRADE field.

The screen asking whether or not you want to enter a CONDITIONAL will appear. Enter "Y" for "YES". This new screen will appear:

ENTER YOUR CONDITIONAL STATEMENT (MAXIMUM LENGTH = 70 CHARACTERS) *F1 = PREVIOUS *F5 = SELECT FIELD *F3 = NEXT * [RETURN] = FINISHED	
<div style="border: 1px solid black; width: 15px; height: 15px; margin-left: 5px;"></div>	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____ [inverse blanks] _____ <div style="display: flex; justify-content: space-around; width: 100%;"> LAST FIRST </div>	
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

It is at this point that you will compose your CONDITIONAL statement. As you do, it will appear between the two lines in the center of the screen. If you make a mistake at any time, simply push the "DEL" key to make corrections.

Example #1 – All students in the tenth grade

In this example, we are going to be keying-in on the **GRADE** field. This is the field upon which we wish to place a **CONDITION**. Press the **F3 (NEXT)** key three times. The white bar will move to the **GRADE** field. Press **F5 (SELECT FIELD)** to tell the **DATABASE MANAGER** that you wish to place a **CONDITION** on this field. The screen will change to look like this:

ENTER YOUR CONDITIONAL STATEMENT (MAXIMUM LENGTH = 70 CHARACTERS) *F1 = PREVIOUS *F5 = SELECT FIELD *F3 = NEXT *[RETURN] = FINISHED	
f\$(4) ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____	
LAST	FIRST
PHONE _____	ZIPCODE _____
GRADE [inv. blanks]	G.P.A. _____

Note that the white bar stays in the **GRADE** field while "f\$(4)" has been placed on the Prompt Line. You could have typed it in manually, but it is much simpler to use the **DATABASE MANAGER** to do this tedious work for you.

Now you may type in your **CONDITIONAL**. Since we want all students in the tenth (10th) grade, push the "=" sign on your keyboard. This symbol will appear after the variable on your prompt line. Now type in a quote sign (") the number "10", and another quote sign ("). Your screen should now look like this:

ENTER YOUR CONDITIONAL STATEMENT (MAXIMUM LENGTH = 70 CHARACTERS) *F1 = PREVIOUS *F5 = SELECT FIELD *F3 = NEXT * [RETURN] = FINISHED	
f\$(4) = "10" ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____	_____
LAST	FIRST
PHONE _____	ZIPCODE _____
GRADE [inv. blanks]	G.P.A. _____

Here is what you are saying to the computer: "IF the number in the **GRADE** field equals '10', THEN display that record on the screen during a review of the file. IF NOT, skip it." Push the [CR] key to enter your **CONDITIONAL** and exit to the **REVIEW/EDIT** mode. The first record in your file which satisfies the **CONDITIONAL** you've set will be displayed on the screen. It's **RECORD NUMBER** will be displayed on the Prompt Line. To see if there are more, press the F3 (NEXT) key. Flip through all qualifying entries in this manner.

Example #2 — All students whose names come after "Jones, Bill"

Let's try another example. Press the F7 (EXIT) key until you get to the **REVIEW/EDIT MENU**. Select Option #1 (**REVIEW/EDIT RECORDS**) and answer "Y" for "YES" to the **CONDITIONAL** question. The following screen should be displayed:

USER'S MANUAL

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ENTER YOUR CONDITIONAL STATEMENT
(MAXIMUM LENGTH = 70 CHARACTERS)

*F1 = PREVIOUS	*F5 = SELECT FIELD
*F3 = NEXT	*[RETURN] = FINISHED

f\$(1)■

f\$(1) > ☐

f\$(1)>"Jones, Bill

IT IS IMPERATIVE THAT YOU TYPE IN THE NAME IN QUOTES APPEARING EXACTLY AS IT DOES IN THE DATABASE INCLUDING THE TRAILING BLANKS. ("Jones, Bill" fills 11 spaces, leaving 14 empty ones to the end of the field.)

You are telling the program to give you every record which has an entry alphabetically greater than "Jones, Bill" in the STUDENT'S NAME field. Let's check to make sure we did it correctly.

Press [RETURN] to enter your CONDITIONAL and EXIT the mode you are currently in. You will be placed in the REVIEW/EDIT mode where you can use the F3 (NEXT) and F1 (PREVIOUS) keys to wisk through the records in your file which fulfill the CONDITIONAL you've placed on the STUDENT'S NAME field.

When you've finished, exit to the REVIEW/EDIT MENU and choose Option #1 (REVIEW/EDIT RECORDS) so that we can give you one more example. Answer "Y" for "YES" to the CONDITIONAL question. You should be back at the point where you can enter a new CONDITIONAL statement.

Example #3 – All entries with "Smith" in the STUDENT'S NAME field

Now we get a little more complicated. We want to bring up every record which begins with the letters, "SMITH". We can't accomplish this as we did in Example #2, because there are two completely different first names which accompany this one last name.

As an example of how any BASIC statement can be used on the MIRAGE DATABASE MANAGER'S CONDITIONAL Prompt Line, we are going to demonstrate an application of the "mid\$" command. The "mid\$" (string,n1,n2) function is used to isolate a specific number (n2) of string characters that are (n1) characters from the left-most character in the string. For example, PRINT mid\$ ("COMPUTER",4,3) prints the letters PUT, which are 3 MIDDLE characters starting with the fourth string character from the left.

LESSON NINE

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Without depressing the F5 (SELECT FIELD) key, type the following on your Prompt Line: "mid\$(". The Prompt Line should now look like this:

```
mid$(
```

Once again, the long, white bar is positioned in the STUDENT'S NAME field. Press the F5 key to SELECT this field as the one upon which you want to place a CONDITIONAL. The prompt line will look like this:

```
mid$(f$(1)
```

Next, type in the following: ",1,5)". The Prompt Line will reflect the change thusly:

```
mid$(f$(1),1,5)
```

To finish up, type in: "= "SMITH" ". Your completed formula should look like this:

ENTER YOUR CONDITIONAL STATEMENT (MAXIMUM LENGTH = 70 CHARACTERS) *F1 = PREVIOUS *F5 = SELECT FIELD *F3 = NEXT * [RETURN] = FINISHED	
mid\$(f\$(1),1,5) = "SMITH" ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____	[inverse blanks] LAST FIRST
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

You are telling the **DATABASE MANAGER**, through **BASIC**, to give you every record in which the first five characters of the **STUDENT'S NAME** field "f\$(1)" equal "SMITH". All other **BASIC** functions work in exactly the same manner, substituting a field you have selected through the program for a string which is being asked for in a **BASIC** formula.

Check to make sure your formula works correctly. Press the [CR] key to enter your **CONDITIONAL** statement, and run through the entries in the **REVIEW/EDIT** mode. There should only be two that appear: "Smith, Mike" and "Smith, Steve".

How complicated can **CONDITIONAL STATEMENTS** be? As complicated as you desire, providing you stay within the 70 character limitation. Here is an example of a more complex **CONDITIONAL** which is perfectly valid for use:

```
f$(4) >= " 8" and mid$(f$(1),1,5) = "SMITH"
OR mid$(f$(1),1,5) = "JONES"
```

What is it saying? "Give me all the students in the 8th grade or higher and whose last names begin with 'SMITH' or all students whose last name begins with 'JONES' ".

We hope you begin to see the fantastic power made available to you by the DATABASE MANAGER using **CONDITIONAL STATEMENTS**.

Besides some very important notes, that ends our tutorial lesson on **CONDITIONAL** statements.

SPECIAL NOTES ON CONDITIONALS

- 1) **CONDITIONAL** statements can be no longer than 70 characters (equivalent to the spaces on the two Prompt Lines on the **CONDITIONAL** entry screen.)
- 2) You may include numbers in your **CONDITIONAL** statements. Example: `val (f$(5))*10 > 30`
- 3) There may be more than one field of a record included in a **CONDITIONAL** statement. Example: `f$(4) > "10"` and `f$(5) > "3.00"`
- 4) While it is possible to find an individual entry through the **CONDITIONAL** function, you will find this task accomplished much more efficiently through the use of the **SELECT/EDIT INDIVIDUAL RECORD** feature detailed in **LESSON THREE**.
- 5) The use of **CONDITIONALS** is exactly the same in the **PRINT** mode as it is in the **REVIEW/EDIT Mode**. The **CONDITIONAL** question will be asked right after you choose what format (**FORM, LIST, REPORT, LABEL**) you want to print in. Proceed from there as you did in this **LESSON**.

SUMMARY

In **LESSON NINE** you learned how to:

- 1) Define a **CONDITIONAL** statement in relation to a given field and match each record against that **CONDITIONAL**.

LESSON TEN will conclude the **ADVANCED TUTORIAL** with detailed instructions on how to use the various **DATABASE MANAGER FILE COMMANDS**.

LESSON TEN – FILE COMMANDS

You have come to LESSON TEN, the final lesson of the DATABASE MANAGER'S User's Guide. It follows nine complete chapters crammed full of information on how to create, then manipulate in a myriad of different ways, the fields, records, and files you've created through this program. We trust that they have been helpful to you.

LESSON TEN is none-the-less important for you to study carefully because it deals with FILE COMMANDS—operations performed by the program to accomplish some of the most primary tasks of database operation. To a certain degree, they are assembled here solely because there just isn't anywhere else they fit; yet they are so necessary to include.

This will be a lengthy chapter — not so much because any one function is that difficult to explain or comprehend, but because there is a lot of territory to cover. We will begin with an overview of SUBFILES, then continue to a summary of the REPLACE FIELDS feature of the DATABASE MANAGER. A short section will detail the usage of the PACK function, followed by a rather lengthy explanation of the useful MERGE FILES feature. LESSON TEN also will teach you how to set-up a SEQUENTIAL DATA FILE which can be read by most of the standard word processors. In closing, the procedures for listing a file DIRECTORY and DELETING A FILE will be discussed.

If you've ever said to yourself, "I know the DATABASE MANAGER can do that (particular function), but I don't know where to find it", the FILE COMMAND section is more than likely the place you should look.

FILE COMMANDS

Let us begin. From the MAIN MENU of the DATABASE MANAGER, select Option #1 (SELECT FILE). Load our tutorial file called STUDENT. When you are returned to the MAIN MENU, choose Option #7 (FILE COMMANDS) and the following screen will appear:

FILE COMMAND MENU	
1) FORMAT NEW DISK	5) MERGE FILES
2) CREATE SUBFILE	6) CREATE SEQ
3) REPLACE FIELDS	7) DIRECTORY
4) PACK FILE	8) DELETE FILE
SELECT OPTION NUMBER ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____	
LAST	FIRST
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

FILE COMMAND OPTION #1 FORMAT NEW DISK

If you were to choose Option #1 from this MENU, you would be placed in the sequence for creating a new data diskette as outlined in the very first section of LESSON ONE. If you are not familiar with this procedure, turn to that lesson and briefly review it.

FILE COMMAND OPTION #2 CREATE SUBFILE

Using all of the same fields established in the initial formulation of a file, it is possible to create a SUBFILE of that original document. A SUBFILE is comprised of all, or part of the records the original file contained at the time it was broken out. A sorted SUBFILE can be created if the original file is placed in order before the CREATE SUBFILE process is executed.

You may use the CREATE SUBFILE command to make a "BACK-UP" copy of your file. To do so, simply CREATE a SUBFILE which includes all of the records of the original. Remember, however, that if you do it in this manner, the "BACK-UP" file will be on the same

Data Diskette as the original file. There is no way to overcome this problem unless you use the "COPY 1541" program which came with your disk drive.

We are going to **CREATE** a **SUBFILE** of our **STUDENT** file which will be comprised of all pupils in the seventh (7th) grade. Each record of the new **SUBFILE** will contain all of the same fields the original one did, but the file will stand completely on its own once it is initialized.

Press Option #2 (**CREATE SUBFILE**) from the **FILE COMMAND MENU**. If you were currently using a **SORT INDEX** in relation to our **STUDENT** file, you would be prompted to decide whether you wanted the new **SUBFILE** created in sorted order. Because we are not using any **SORT INDEX** at the present time, this prompt will **NOT** appear. In either case, you will come eventually to this screen:

CREATE SUBFILE		
*DO YOU WISH TO ENTER A CONDITIONAL STATEMENT?		
ENTER (Y) FOR YES OR (N) FOR NO ■		
STUDENT INFORMATION DATABASE		
STUDENT'S NAME _____	LAST _____	FIRST _____
PHONE _____	ZIPCODE _____	
GRADE _____	G.P.A. _____	

You are being asked if you would like to enter a **CONDITIONAL STATEMENT**. With a **CONDITIONAL STATEMENT**, you can define the conditions which records must meet for inclusion in the new **SUBFILE**. **IF YOU SET NO CONDITIONS, A SUBFILE CONTAINING ALL OF THE RECORDS IN THE ORIGINAL WILL BE CREATED.**

For our example, we **ARE** setting a **CONDITIONAL**. We want only the student's records in the seventh (7th) grade to be transferred to our new **SUBFILE**. Answer "Y" for "YES" to the **CONDITIONAL** question. This screen will appear:

ENTER YOUR CONDITIONAL STATEMENT (MAXIMUM LENGTH = 80 CHARACTERS) *F1 = PREVIOUS *F5 = SELECT *F3 = NEXT *F7 = EXIT	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____	[inverse blanks] _____
LAST	FIRST
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

Remember, we want our **SUBFILE** to be created using the **GRADE** field as a reference (all students in the seventh). With this in mind, move the long white bar to the **GRADE** field and choose it with the **F5** key. The following will appear in the prompt line:

f\$(4) █

Now type an equal sign (=) followed by a quote, a space, the number 7, and another quote (" 7"). The prompt line should look like this:

f\$(4) = " 7" █

You are telling the **DATABASE MANAGER** to create a **SUBFILE** which contains only the records of those students currently in the seventh (7th) grade. The **CONDITIONAL** could have been as complex or as simple as you desired (see **LESSON NINE**), it makes no difference.

Press the [CR] key to enter your **CONDITIONAL**, and the following screen will appear:

CREATE SUBFILE *ENTER SUBFILE NAME *10 CHARACTERS MAXIMUM *[RETURN] = FINISHED		
ENTER SUBFILE NAME ■		
STUDENT INFORMATION DATABASE		
STUDENT'S NAME _____		
LAST		FIRST
PHONE _____		ZIPCODE _____
GRADE _____		G.P.A. _____

The new **SUBFILE** will be stored on your data diskette, so it must be given a name with which it can be referenced. The same rules and pointers for naming a file we discussed in **LESSON ONE** apply here. You may want to refresh your memory by checking back.

Let's call this new (SUB)FILE "**SEVENTH**", meaning that it is comprised exclusively of seventh (7th) graders. When you push [RETURN], the program will begin copying the appropriate records over to the new file. **DO NOT BE ALARMED IF IT TAKES A LONG PERIOD OF TIME TO COPY** (up to seven seconds per record). This process is quite complicated and requires a great deal of disk manipulation.

When the disk finishes its work (the light will NOT go out), and the **FILE COMMANDS MENU** comes on the screen, the transfer process has been completed and the new **SEVENTH** file is on your data diskette. Load it from your **MAIN MENU** and check it from the **REVIEW/EDIT** mode just to make sure. There should be just three records in it. Remember, these records could also have been transferred in **SORTED** order giving you a physically **SORTED** seventh grade file. The combinations are limitless and extremely useful when creatively applied.

FILE COMMAND OPTION #3 REPLACE FIELDS

Using the **REPLACE FIELDS** capability of **MIRAGE'S DATABASE MANAGER**, it is possible to change the value of one or more like fields without physically editing them one-by-one.

Say, for instance, that the three seventh graders in our **STUDENT** file had all graduated to the eighth (8th) grade. We can tell the program to update all of **GRADE** fields accordingly without any intervention on our part. In fact, we could make the conditional more complex, writing it in a manner that would update the grade **ONLY** if the **G.P.A.** was above a passing level. Let's see how it's done.

Make sure the file currently in use is our **STUDENT** (not **SEVENTH**) file. Move to the **FILE COMMANDS MENU** and choose Option #3 (**REPLACE FIELDS**). A screen will appear, asking if you would like to enter a conditional statement.

We do want to **REPLACE** the values of the **GRADE** field conditionally; e.g., we want to replace with "8" **ONLY** the fields whose value is currently "7". Answer "Y" for "YES" to this conditional question. Note: If you answer "NO", the program will automatically replace **ALL** records with the new given value when the time comes. With a "NO" answer you move to the section of the program where you are asked which field you wish to replace.

Because we answered "YES", this screen appears:

ENTER YOUR CONDITIONAL STATEMENT (MAXIMUM LENGTH = 70 CHARACTERS) *F1 = PREVIOUS *F5 = SELECT FIELD *F3 = NEXT *F7 = FINISHED	
<div style="border: 1px solid black; width: 15px; height: 15px; margin-bottom: 5px;"></div>	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____ [Inverse blanks] _____ <div style="display: flex; justify-content: space-around; width: 100%;"> LAST FIRST </div>	
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

The program is asking you under which conditions you wish to replace the **GRADE** field's current value. Build a conditional statement in the prompt line exactly like you did in **LESSON NINE**. Move the long white bar to the **GRADE** field and press **F5** to **SELECT** it. The prompt line will read:

```
f$(4) █
```

We have decided previously that we want to replace all records with the value of "7". Therefore, type in an equal sign (=), a quote ("), a space, the number seven (7), and another quote ("). The prompt line will look like this:

```
f$(4) = " 7" █
```

You are telling the program to replace every record in which the number seven (7) appears in field #4 (**GRADE**).

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Press [CR] to enter your conditional statement. This screen will appear:

REPLACE FIELDS	
*SELECT THE FIELD YOU WISH TO REPLACE	
*F1 = PREVIOUS	*F5 = SELECT
*F3 = NEXT	*F7 = EXIT
SELECT THE FIELD	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____ [inverse blanks]	
LAST	FIRST
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

Because we want to replace all "7"s with "8"s in the **GRADE** field, our choice here will be the **GRADE** field. Move the long white bar to the **GRADE** field and push F5.

Now you have to tell it what to replace those "7"s with. When you've chosen the field above using the F5 key, this screen will come up:

REPLACE FIELDS *ENTER THE REPLACEMENT VALUE *[RETURN] = FINISHED	
ENTER THE REPLACEMENT VALUE STUDENT INFORMATION DATABASE STUDENT'S NAME _____ <div style="display: flex; justify-content: space-around; width: 100%;"> LAST FIRST </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> PHONE _____ ZIPCODE _____ </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> GRADE ■ _____ G.P.A. _____ </div>	

We now must enter the value which will replace the sevens (7s) in the **GRADE** field. We want to put in "8"s, so press the **SPACE** bar and the number "8" while the cursor is in the **GRADE** field. You are telling the program to put that value in the **GRADE** field when the time comes. When you are finished, press [CR]. The final screen of this sequence will come up:

REPLACE FIELDS *COMPUTER REPLACING FIELDS NOW *PLEASE WAIT	
RECORD NUMBER 1 ■	
STUDENT INFORMATION DATABASE STUDENT'S NAME _____ <div style="display: flex; justify-content: space-around; width: 100%;"> LAST FIRST </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> PHONE _____ ZIPCODE _____ </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> GRADE _____ G.P.A. _____ </div>	

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Without any further prompting, the program will automatically replace all sevens (7s) in the GRADE field with eights (8s). When it has finished, you will be returned to the FILE COMMANDS MENU.

If you execute the REPLACE FIELD function in relation to a CALCULATED FIELD, the CALCULATED FIELD will NOT re-calculate. To do so, you must move to the EDIT mode and press [RETURN] in that field for each record. They will re-calculate at that time.

If you are REPLACING a FIELD with a new value, and that new value does not completely fill the destination field, it will be placed flush to the LEFT side of the field. If the value is larger than the destination field, it will be placed flush to the left and the right end will be truncated to fit.

The key to this whole REPLACE FIELDS function is your creative use of the CONDITIONAL statement. Your applications can be as complex as the CONDITIONAL statements you dare to design.

FILE COMMAND OPTION #4 PACK FILE

In LESSON TWO, which covered the REVIEW/EDIT capabilities of the DATABASE MANAGER, you were taught how to DELETE a record from the file you had created. There was a special note there which stated that DELETED records, although they are no longer accessible by the program, still take up valuable storage space on the data diskette. In order to remove these DELETED records, the file must be PACKED.

The PACK FILE process is an easy one to learn. Let us assume that you had removed some records from your STUDENT file using the DELETE function of the REVIEW/EDIT mode. You now want to physically eliminate these DELETED records from your data diskette in order to create additional room for future information.

From the FILE COMMANDS MENU, choose Option #4 (PACK FILE). This screen will appear:

PACK *DO YOU WANT TO PACK THE FILE AT THIS TIME?	
ENTER (Y) FOR YES OR (NO) FOR NO ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____	
LAST	FIRST
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

If you want to **PACK** the file at this time, press "Y" for "YES". (An "N" for "NO" response will return you to the **FILE COMMANDS MENU**.) Answer "Y" and the following screen will replace the one above:

PACK *PACKING THE FILE — PLEASE WAIT	
RECORD NUMBER 1 ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____	
LAST	FIRST
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

The program is now **PACKING** your **STUDENT** file. You may monitor its progress by watching the "RECORD NUMBER ____" status on the prompt line. Depending on the record size, and the number of records currently in the file, this may be a lengthy process. Be patient. When it is finished, you will be returned to the **FILE COMMANDS MENU**.

FILE COMMAND OPTION #5 MERGE FILES

There are times when it will be advantageous for you to take records (or sections of records) from one file and place them in another. This is particularly true when you have created a file, added records to it, then realized that you had inadvertently left out a field you wanted to be sure to include. With this **MERGE FILES** function, you would simply create a new file (which includes the missing field), and **MERGE** it with the information you had entered into the original file. The files can have completely different structures (including field lengths), and you can transfer the information from **EVERY** field of each record, or be selective as to which ones you want relayed.

For an example, let's **MERGE** our **STUDENT** file (created in **LESSON ONE**) with the subfile called **SEVENTH** (created in **LESSON TEN**) with **JUST** the information from the **STUDENT'S NAME** field. When completed, this **MERGE** will give us a file still named **STUDENT** which will have eight records in it instead of the original five. The last three records will have information in only the **STUDENT'S NAME** field.

THE FILE IN USE AT THE TIME YOU ENTER THE MERGE FILES MODE IS THE ONE WHICH THE PROGRAM WILL MERGE TO. You should currently be using the **STUDENT** file, and since that is the one we want to **MERGE TO**, enter the **MERGE** mode by choosing Option #5 from the **FILE COMMANDS MENU**. This screen will appear:

<p>MERGE FILES</p> <p>*ENTER THE NAME OF THE FILE YOU WISH TO MERGE FROM</p> <p>*[RETURN] = FINISHED</p> <p>*F7 = EXIT TO FILE COMMAND MENU</p>
<p>ENTER FILE NAME ■</p>

Here you are being asked to enter the name of the file you wish to **MERGE FROM**. If you can't remember its name, press the F7 (EXIT) key, return to the FILE COMMAND MENU, and look at the DIRECTORY using Option #7 (DIRECTORY). We want to MERGE FROM the SEVENTH file, so type in SEVENTH on the prompt line and press RETURN [CR]. The computer will read this file's form into its memory, and this screen will appear:

MERGE FROM SEVENTH		TO STUDENT	
*F1 = PREVIOUS		*F5 = SELECT	
*F3 = NEXT		*F7 = EXIT	
SELECT FIELD TO MERGE FROM			
STUDENT INFORMATION DATABASE			
STUDENT'S NAME _____		[inverse blanks] _____	
	LAST	FIRST	
PHONE _____		ZIPCODE _____	
GRADE _____		G.P.A. _____	

The names of the files you are currently using now appear in the upper right hand portion of the screen.

Note: You will always be working in "pairs" during the MERGE function; choosing a field on the old file to MERGE FROM and a field on the new file to MERGE TO. You are now being asked to determine which field of the SEVENTH file you wish to MERGE FROM. Move the long white bar to the STUDENT'S NAME field and SELECT it with the F5 key. The screen will change to:

MERGE FROM SEVENTH	TO STUDENT
*F1 = PREVIOUS *F3 = NEXT	*F5 = SELECT *F7 = EXIT
SELECT FIELD TO MERGE TO	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____ [inverse blanks] _____ <div style="display: flex; justify-content: space-around; width: 100%;"> LAST FIRST </div>	
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

Now **SELECT** the field you want to **MERGE TO**. Whatever information was in the **STUDENT'S NAME** field on the records of the **SEVENTH** file will be placed in this field on the records of the **STUDENT** file.

If you **MERGE TO** a field with a shorter length than the **MERGE FROM** field, and the data fills the original field, the data will be truncated (cut-off at the end) in the destination field.

We want to **MERGE TO** the **STUDENT'S NAME** field, so move the long white bar to that field and **SELECT** it with the **F5** key. You will see this screen:

MERGE FROM SEVENTH TO STUDENT *ANY MORE FIELDS TO BE MERGED?	
ENTER (Y) FOR YES OR (N) NO ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____ <div style="display: flex; justify-content: space-around; width: 100%;"> LAST FIRST </div>	
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

You can **MERGE FROM/TO** as many fields as you like — there is no limitation. Remember, however, that if you **MERGE TO** the same field twice, the value of the second transfer is the one which will take priority. We are **MERGING** only one field, so press "N" FOR "NO". While the program and computer are working, this screen will appear:

MERGE FROM SEVENTH TO STUDENT *PROGRAM NOW MERGING FILE *PLEASE WAIT	
RECORD NUMBER 1 ■	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____ <div style="display: flex; justify-content: space-around; width: 100%;"> LAST FIRST </div>	
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

You can monitor the progress of the **MERGE** by viewing the **RECORD NUMBER** on the Prompt Line. When the function is completed, you will be returned to the **FILE COMMANDS MENU**.

If you execute the **MERGE FILES** function in relation to a **CALCULATED FIELD**, the **CALCULATED FIELD** will **NOT** re-calculate. To do so, you must move to the **EDIT** mode and press **[RETURN]** in that field on each record. They will re-calculate at that time.

If during a **MERGE**, the value being transferred does not completely fill the destination field, it will be placed flush to the **LEFT** side of the field. If the value is larger than the destination field, it will be placed flush to the left and the right end will be truncated to fit. It is advisable to always try and **MERGE** fields of the same size (especially in regard to numerical values).

If you wish to check to see if the function was carried out properly, move to the **REVIEW/EDIT** mode and breeze through the records of your **STUDENT** file. There will be eight entries, the last three having names in the **STUDENT'S NAME** field and nothing in the others.

FILE COMMAND OPTION #6 CREATE SEQ (SEQUENTIAL FILE)

Using a word processor in conjunction with a **SEQUENTIAL FILE** created by a good database management system, it is possible to insert information from the database automatically into the text of letters and documents. **SEQUENTIAL FILES** are not the most efficient means of storing information. This explains why they are not regularly used for storing data by the best database systems (including the **DATABASE MANAGER**). This program does, however, have the ability to create a **SEQUENTIAL FILE** for use by a word processor which must access information in this fashion.

With the **STUDENT** file loaded into the program, move from the **FILE COMMANDS MENU** with Option #6 (**CREATE SEQ**). If you are currently using this file in relation to a **SORTED INDEX**, you will now be asked if you want your new **SEQUENTIAL FILE** to be created according to this **SORTED** order. We are **NOT** using a **SORT INDEX**, so you will not see this screen.

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The screen asking if you want your new **SEQUENTIAL FILE** to be created **CONDITIONALLY** will come up next. Here, you may enter a **CONDITIONAL** statement (as you did in **LESSON NINE**) which will allow only the transfer of records meeting certain criteria to your new **SEQUENTIAL FILE**. For example, you could create a **SEQUENTIAL FILE** comprised solely of students whose last names are "Smith". For help with **CONDITIONALS**, review **LESSON NINE**.

We are not going to place any **CONDITIONALS** on our new **SEQUENTIAL FILE**, so answer "N" for "NO" to the **CONDITIONAL** question. This screen will appear:

CREATE SEQUENTIAL FILE	
*SELECT THE FIELD YOU WANT TO OUTPUT TO THE DISK	
*F1 = PREVIOUS	*F5 = SELECT
*F3 = NEXT	*F7 = EXIT
SELECT FIELD	
STUDENT INFORMATION DATABASE	
STUDENT'S NAME _____ [inverse blanks] _____	
LAST	FIRST
PHONE _____	ZIPCODE _____
GRADE _____	G.P.A. _____

You are now being asked to choose which fields you want to include in the records of your new **SEQUENTIAL FILE**. Let's use both the **STUDENT'S NAME** field and the **PHONE** number field. Move the long white bar to the **STUDENT'S NAME** field and press the **F5** key to **SELECT** it. A screen asking if you would like to select any more fields will appear. We do, so press "Y" for "YES". The **SELECT A FIELD** screen will return. Move the bar to the **PHONE** field and **SELECT** it for inclusion in our new **SEQUENTIAL FILE**. Do we want to enter more fields? "NO", so push "N" when the screen asking if you want to select any more fields comes up. This screen will appear:

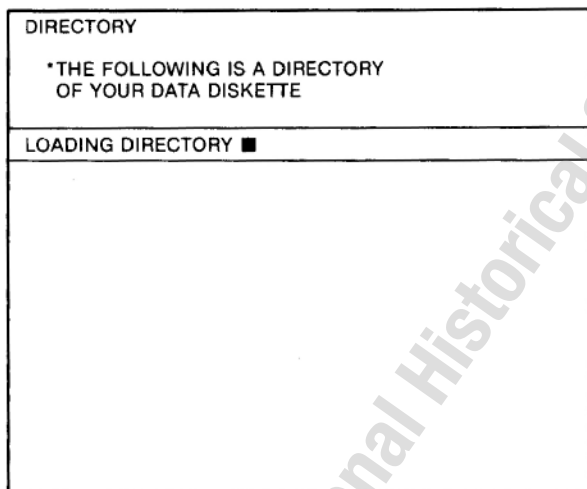
CREATE SEQUENTIAL FILE *ENTER FILE NAME *10 CHARACTERS MAXIMUM *[RETURN] = FINISHED
ENTER FILE NAME ■

You must now give your new **SEQUENTIAL FILE** a name under which it is stored on the data diskette. All of the standard rules for naming files apply (see **LESSON ONE**). You will find it handy to include in your name some reference to the fact that it is a **SEQUENTIAL FILE**. Name this one **STUSEQ**. Press **[RETURN]**, and the program will place the file on your Data Diskette. Depending on the record size, and the number of records you are transferring, this may be a lengthy process. When it is finished, you will be returned to the **FILE COMMANDS MENU**. For the correct usage of a **SEQUENTIAL FILE** in relation to a word processing program, consult the word processor's manual.

FILE COMMAND OPTION #7 DIRECTORY

It is possible to review the names of the files on your data diskette without completely exiting the **DATABASE MANAGER** program. This is accomplished from the **FILE COMMAND MENU** using Option #7 (**DIRECTORY**).

With a data diskette inserted in the disk drive, press #7 from the **FILE COMMAND MENU**. This screen will appear:



It will stay on the screen for a few moments while the **DIRECTORY** is loading from the disk drive. The screen will then clear and a **DIRECTORY** listing will begin to scroll on the screen from the top. If the listing is longer than one screen, and you wish to slow the scrolling down, depress the **CONTROL [CTRL]** key on the left side of your keyboard. When the **DIRECTORY** has been completely listed, the program will stop and ask if you wish to return to the **FILE COMMAND MENU**. Press the **RETURN [CR]** key to do so.

Note that the directory displays the number of available data blocks that remain on your diskette.

FILE COMMAND OPTION #8 DELETE FILE

The final option on the **FILE COMMAND MENU** allows you to **DELETE** a file from your data diskette. It is a simple function to execute, but it is important to carefully consider its ramifications before putting it into action. When you **DELETE** a file from your data diskette, you destroy any possible chance of ever accessing the data it contains. It is gone **FOREVER**. This additional factor is important: When you **DELETE** a file from your data diskette, you also **DELETE** any accompanying **SORT INDEXES**.

Press the #8 (DELETE FILE) key from the FILE COMMAND MENU.
This screen will appear:

DELETE FILE *ENTER THE NAME OF THE FILE YOU WISH TO DELETE *[RETURN] = FINISHED *F7 = EXIT
ENTER FILE NAME ■

Type in the file name SEVENTH. When the DELETE FILE command is executed, this file will be stricken from the data diskette. When you press the [RETURN] key to enter the name, this double-protection screen will appear:

DELETE FILE *ARE YOU SURE YOU WISH TO DELETE THIS FILE? (LAST CHANCE)
ENTER (Y) FOR YES OR (N) FOR NO ■

Press the "Y" for "YES" key and the program will delete the file named SEVENTH from your data diskette. It will also delete any miscellaneous SORT INDEX files which were offsprings of that file. You will be returned to the FILE COMMANDS MENU from which you can EXIT (F7) to the MAIN MENU.

Please note that the program will NOT allow you to DELETE the FILE you are currently using. If you try to delete it, all of the accompanying files will be wiped-out, but not the master data file.

This concludes LESSON TEN, the closing section of our ADVANCED TUTORIAL. All of the tools necessary for the proper implementation of the DATABASE MANAGER program now have been provided. If you need further assistance, the REFERENCE SECTION of this User's Manual will serve as a useful resource. An occasional review of these ten tutorial lessons would also be a good idea. At any rate, we wish you good luck and many hours of enjoyable and profitable computing using the DATABASE MANAGER from MIRAGE CONCEPTS!

SUMMARY

In LESSON TEN you learned to accomplish these tasks using the FILE COMMAND options:

- 1) Create a SUBFILE
- 2) REPLACE information in certain fields with new values
- 3) Remove deleted files from the data diskette using the PACK function
- 4) MERGE a file with another file
- 5) Create a SEQUENTIAL FILE for use with a word processing package
- 6) View the data diskette DIRECTORY without exiting the program
- 7) DELETE a file from the data diskette

REFERENCE

REFERENCE

This is the **REFERENCE** section of the **MIRAGE CONCEPTS' DATABASE MANAGER** program. In it you will find a brief, but concise, procedural listing for all of the program's commonly-used functions.

THE REFERENCE SECTION IS NOT AS COMPLETE AS THE TUTORIAL SECTION. It is not intended to be a substitute for the ten **TUTORIAL** lessons which precede it. A thorough study of that section is mandatory for a proper understanding of the **DATABASE MANAGER** program and how it operates.

Use this **REFERENCE** section at those times when you can't quite remember how a **TUTORIAL** lesson instructed you to accomplish a certain task. You will find that it provides just the facts. No frills are added.

The **REFERENCE** section is arranged alphabetically. Instructions are consecutively numbered within functions, and should be executed in the order they appear. "Screen:" prompts indicate the main headings of the program as they appear on the screen at that point of program execution. The "Enter:" prompt signifies the proper keyboard entry command to complete the next operation in the function sequence.

We trust that you will find this **REFERENCE** section both handy and helpful!

APPEND (FILE) — The APPEND function allows you to add records to your file.

- 1) **SELECT** a file for current use (See **SELECT**).
- 2) **Screen:** MAIN MENU
Enter: Option #2 (APPEND FILE)
- 3) **Screen:** APPEND MENU
- 4) Fill-in the fields on the screen with the appropriate information.
- 5) The F1, F2, F3, and F4 keys will facilitate cursor movement between fields
- 6) When you are finished entering all information of a single record, press F5 (SAVE).
- 7) Corrections (Unsaved Record): Cursor to proper position and type over
- 8) Corrections (Saved Record): See **EDIT**
- 9) When you have finished entering the records, press F7 (EXIT).
- 10) **Screen:** MAIN MENU

CALCULATED FIELDS — A CALCULATED FIELD is one whose value is derived from the contents of other fields to which arithmetic functions have been applied.

- 1) **Screen:** MAIN MENU
Enter: Option #6 (CREATE NEW FORM)
- 2) **Screen:** CREATE NEW FORM
- 3) Create a form using the procedure outlined in the **CREATE** section of this Reference Guide.
- 4) When you are finished, press F5 (FINISHED CREATING FORM).
- 5) **Screen:** CREATE NEW FORM — "Calculated Fields?" (Yes or No)
Enter: Y (for YES)
- 6) **Screen:** CREATE NEW FORM — "Enter Your Equation"
- 7) Enter a standard BASIC calculation. Fields of the form are identified numerically (field #1 = f\$(1), field #2 = f\$(2), etc.). You may enter the calculation directly from the keyboard, or use the F1 and F3 keys to move the long white cursor to a particular field, pressing the F5 (SELECT FIELD) key to choose it for inclusion in your formula. Your calculation can be no longer than 50 characters. The length of a calculated field must be one space wider than the highest possible numeric result of the calculation performed in it.

REFERENCE

- 8) When you are finished entering the calculation, press [CR].
- 9) **Screen:** CREATE NEW FORM — "Do You Want To Enter Another Calculation?" (Yes or No)
- 10) You are given the option to enter another CALCULATED FIELD. (NO)
- 11) **Screen:** CREATE NEW FORM — "Enter Form Name"
Enter: Form name
- 12) Finished entering form name: Press [CR]
- 13) The disk drive will activate and work for approximately 20 seconds.
- 14) **Screen:** MAIN MENU

CONDITIONAL STATEMENTS — A CONDITIONAL STATEMENT allows you to define CONDITIONS against which the computer will make true/false decisions in regards to the inclusion of your records in the review or print modes.

- 1) **SELECT** a file for current use (See SELECT)
- 2) **Screen:** MAIN MENU
- 3) In most cases, you will enter a **CONDITIONAL STATEMENT** from either the REVIEW/EDIT or PRINT modes. We will use the REVIEW/EDIT mode for this example.
- 4) **Enter:** Option #3 (REVIEW/EDIT)
- 5) **Screen:** REVIEW/EDIT MENU
Enter: Option #1 (REVIEW/EDIT ALL RECORDS)
- 6) If you are using a **SORT INDEX** in relation to the file currently selected, you will be asked if you want to **REVIEW** the records in sorted order.
- 7) **Screen:** REVIEW — "Do You Wish To Enter a Conditional Statement?"
- 8) **Enter:** Y (for YES)
- 9) **Screen:** ENTER YOUR CONDITIONAL STATEMENT
- 10) Enter a **CONDITIONAL STATEMENT**. All standard BASIC conditional statements are compatible with the program. You may enter the formula directly from the keyboard, or use the F1 and F3 keys to move the long white cursor to a particular field, pressing the F5 (SELECT FIELD) key to choose it for inclusion in your formula. Your **CONDITIONAL STATEMENT** can be no longer than 70 characters.

REFERENCE

- 11) When you are finished entering the statement, press [CR].
- 12) **Screen:** REVIEW
- 13) Use the F1 and F3 keys to go forward and backward through the records of your file. Only the records which meet the conditions you defined will be displayed.
- 14) When you are finished reviewing the file, press F7.
- 15) **Screen:** REVIEW/EDIT MENU
Enter: F7
- 16) **Screen:** MAIN MENU

CREATE (FORM) — With the CREATE function, you may design a form on the screen which will become a record when it is filled out. Like records will be placed in a file which will have the same name as the CREATED form.

- 1) **Screen:** MAIN MENU
Enter: Option #6 (CREATE NEW FORM)
- 2) **Screen:** CREATE NEW FORM
- 3) Compose the form on the screen. Parameters:
 - * No more than 200 fields per record
 - * No more than 250 characters per field
 - * No more than 2000 characters per record (excluding titles)
 - * No more than 2500 characters per record (including titles)Titles and headings are NOT necessary.
- 4) Corrections: Cursor to error; type-over
- 5) When you are finished creating the form, press F5.
- 6) **Screen:** CREATE NEW FORM — "Calculated Fields?" (Yes or No)
Enter: N (for NO)
- 7) For YES, see CALCULATED FIELDS
- 8) **Screen:** CREATE NEW FORM — "Enter Form Name"
Enter: Form name
- 9) Parameters:
 - * No longer than 10 characters
 - * Alphabetic or Numeric
 - * Periods and/or dashes acceptable
 - * Other punctuation discouraged
- 10) When you are finished entering the form name, press [CR].
- 11) The disk drive will activate and work for approximately 20 seconds.
- 12) **Screen:** MAIN MENU

REFERENCE

DELETE (FILE) — Using the **DELETE (FILE)** feature, you can remove a file from your data diskette.

- 1) **Screen:** MAIN MENU
- 2) **Enter:** Option #7 (FILE COMMANDS)
- 3) **Screen:** FILE COMMANDS MENU
- 4) **Enter:** Option #8 (DELETE FILE)
- 5) **Screen:** DELETE FILE — "Enter the Name of the File You Want To Delete"
- 6) Type in the name of the file you wish to **DELETE**, exactly as it appears on the data diskette's directory. If you can't remember the correct name or spelling, press **F7** to return to the **FILE COMMANDS MENU** where you can choose Option #7 (**DIRECTORY**). When you have entered the name of the file to be **DELETED**, press **[CR]**.
- 7) **Screen:** DELETE FILE — "Are You Sure You Wish To Delete This File?" (Yes or No)
- 8) Think through carefully the consequences of **DELETING** this particular file from your data diskette. If you are **SURE** you want to proceed, enter **Y** (for Yes). (**YES**)
- 9) The file you specified will now be removed from the data diskette. There is no way to retrieve it. All **SORT INDEXES** associated with this file will also be **DELETED**.
- 10) **Screen:** FILE COMMANDS MENU
- 11) **Enter:** **F7**
- 12) **Screen:** MAIN MENU

DELETE (RECORD) — The **DELETE (RECORD)** function allows you to remove a record from your file.

- 1) **SELECT** a file for current use (See **SELECT**).
- 2) **Screen:** MAIN MENU
Enter: Option #3 (**REVIEW/EDIT**)
- 3) **Screen:** REVIEW/EDIT MENU
- 4) You may **DELETE** in either the **REVIEW/EDIT ALL RECORDS** mode or the **SELECT/EDIT INDIVIDUAL RECORD** mode. The process is exactly the same.
- 5) **Enter:** Option #1 (**REVIEW/EDIT ALL RECORDS**)

REFERENCE

- 6) If you are using a SORT INDEX in relation to the file currently selected, you will be asked if you want to REVIEW the records in sorted order.
- 7) **Screen:** REVIEW — "Do You Wish To Enter a Conditional Statement?"
- 8) You may review only records which meet certain criteria by entering a CONDITIONAL STATEMENT at this point (See CONDITIONAL STATEMENTS).
- 9) **Enter:** Y (for YES) or N (for NO)
- 10) **Screen:** REVIEW
- 11) Use the F1 and F3 keys to go forward and backward through the records of your file until you find the one you wish to DELETE.
- 12) Press F2 to DELETE this record.
- 13) **Screen:** DELETE — "Are You Sure?" (Yes or No)
Enter: Y for YES
- 14) This record has now been DELETED. There is no way to retrieve it. It is, however, still taking up storage room on the data diskette. To regain the usage of this space, the file must be PACKED (see PACK).
- 15) **Screen:** REVIEW
Enter: F7
- 16) **Screen:** REVIEW/EDIT MENU
Enter: F7
- 17) **Screen:** MAIN MENU

DIRECTORY — The DIRECTORY function will allow you to review the names of the files on your data diskette without having to exit the program.

- 1) **Screen:** MAIN MENU
- 2) **Enter:** Option #7 (FILE COMMANDS)
- 3) **Screen:** FILE COMMANDS MENU
- 4) **Enter:** Option #7 (DIRECTORY)
- 5) **Screen:** DIRECTORY — "The Following Is a Directory of Your Data Diskette — Loading Directory"

REFERENCE

- 6) This screen will be visible for a short time while the **DIRECTORY** is loading into the computer's memory. When it is finished loading, it will begin to scroll onto the screen. If the **DIRECTORY** is too long for one screen, you may slow the scrolling down by depressing the control [CTRL] key. The listing will stop when it is completed. Press [CR] to continue.
- 7) **Screen:** FILE COMMANDS MENU
- 8) **Enter:** F7
- 9) **Screen:** MAIN MENU

EDIT (RECORD) — With the **EDIT** feature you may change the information in the fields of a record **AFTER** the record has been saved on your data diskette.

- 1) **SELECT** a file for current use (See **SELECT**).
- 2) **Screen:** MAIN MENU
Enter: Option #3 (**REVIEW/EDIT**)
- 3) **Screen:** REVIEW/EDIT MENU
- 4) You may **EDIT** from either the **REVIEW/EDIT ALL RECORDS** Mode or the **SELECT/EDIT INDIVIDUAL RECORD** mode. The process is exactly the same.
- 5) **Enter:** Option #1 (**REVIEW/EDIT ALL RECORDS**)
- 6) If you are using a **SORT INDEX** in relation to the file currently selected, you will be asked if you want to **REVIEW** the records in sorted order.
- 7) **Screen:** REVIEW — "Do You Wish To Enter a Conditional Statement?"
- 8) You may review only records which meet certain criteria by entering a **CONDITIONAL STATEMENT** at this point (See **CONDITIONAL STATEMENTS**).
- 9) **Enter:** Y (for YES) or N (for NO)
- 10) **Enter:** REVIEW
- 11) Use the F1 and F3 keys to go forward and backward through the records of your file until you find the one you wish to **EDIT**.
- 12) Press F5 to **EDIT** this record.
- 13) **Screen:** EDIT — "Enter New Information"
- 14) Move the cursor to the particular field you want to **EDIT** using the F1 and F3 keys.

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- 15) When you get to the proper field, type-over the old entry with the correct information. (You may use the right cursor key to pass over any characters which do not need correction.)
- 16) If you EDIT A FIELD and do not completely fill it, you MUST press (RETURN) to enter the new data.
- 17) SAVE the new entry by pressing F5 key.
- 18) If you do NOT want to SAVE the new entry, press F7.
- 19) If you want to make corrections to other records, you may do so.
- 20) When you are finished with all EDITS, press F7.
- 21) **Screen:** REVIEW
Enter: F7
- 22) **Screen:** REVIEW/EDIT MENU
Enter: F7
- 23) **Screen:** MAIN MENU

FORMAT (NEW DISK) — The FORMAT function allows you to take a blank diskette and set it up to be used for data storage in a Commodore computer.

- 1) Place a blank diskette (single-sided, double density, soft sector) in the disk drive.
- 2) **Screen:** MAIN MENU
Enter: Option #7 (FILE COMMANDS)
- 3) **Screen:** FILE COMMANDS
Enter: Option #1 (FORMAT NEW DISK)
- 4) FORMAT will completely erase any information on disk at time of format.
- 5) **Screen:** FORMAT NEW DISK — "Do You Wish To Continue?"
Enter: Y (for YES)
- 6) Disk drive will work for approximately two minutes.
- 7) **Screen:** FILE COMMANDS
Enter: F7 (EXIT)
- 8) **Screen:** MAIN MENU

LOAD (PROGRAM) — This is the correct procedure for LOADING the DATABASE MANAGER program into the computer's memory.

- 1) Turn on the disk drive, monitor (or TV), and computer (in that order).

REFERENCE

- 2) **Screen:** COMMODORE 64 BASIC V2
- 3) Insert the Program Diskette into the disk drive.
- 4) **Enter:** LOAD "MDB",8 [CR]
- 5) This will load a boot program into the computer. It will take approximately 15 seconds.
- 6) The disk drive will stop running (the light will go out), and the word "READY" will appear on the screen.
- 7) **Enter:** RUN [CR]
- 8) The disk drive will once again begin to spin. The program will take approximately one minute and fifteen seconds to load.
- 9) **Screen:** MIRAGE DATABASE 1.0 — "Remove the Mirage Program Disk and Insert Your Data Diskette"
- 10) Take the Program Diskette out of the disk drive and store it in a safe place. Insert a data diskette into the disk drive.
- 11) **Enter:** [CR]
- 12) **Screen:** MAIN MENU

MERGE (FILES) — With the MERGE function, you may APPEND one file with the contents of another. The file structure need not be the same, and you can MERGE as many (or as few) fields as you desire.

- 1) **SELECT** a file for current use (See SELECT). The file in use at the time you enter the MERGE FILES mode is the file you will be MERGING TO.
- 2) **Screen:** MAIN MENU
- 3) **Enter:** Option #7 (FILE COMMANDS)
- 4) **Screen:** FILE COMMANDS MENU
- 5) **Enter:** Option #5 (MERGE FILES)
- 6) **Screen:** MERGE FILES - "Enter the Name of the File You Wish to Merge From"
- 7) Enter the name of the file you wish to MERGE FROM. Press [CR] when you are done.
- 8) **Screen:** MERGE FILES FROM [FILE NAME] TO [FILE NAME] — "Select Field To Merge From"
- 9) Move the long, non-flashing cursor to the first field you wish to MERGE FROM and press the F5 key.

- 10) **Screen:** MERGE FILES FROM [FILE NAME] TO [FILE NAME] — "Select Field To Merge To"
- 11) Move the long, non-flashing cursor to the first **field** you wish to **MERGE TO** and press the F5 key. (This is the field on the **MERGE TO** file which will receive the information from the **MERGE FROM** field chosen in instruction #9 above.)
- 12) **Screen:** MERGE FILES FROM [FILE NAME] TO [FILE NAME] — "Any More Fields To Be Merged?" (Yes or No)
- 13) You may **MERGE FROM/TO** as many fields as you wish using this option. (NO).
- 14) **Screen:** MERGE FILES FROM [FILE NAME] TO [FILE NAME] — "Program Now Merging Files"
- 15) The program will now **MERGE** the files. Depending on the length of your files, this could take a good deal of time.
- 16) **Screen:** FILE COMMANDS MENU
- 17) **Enter:** F7
- 18) **Screen:** MAIN MENU

PACK (FILE) — The **PACK** function will remove from the data diskette any records which have been **DELETED** in the **EDIT** mode.

- 1) **SELECT** a file for current use (See **SELECT**).
- 2) **Screen:** MAIN MENU
- 3) **Enter:** Option #7 (**FILE COMMANDS**)
- 4) **Screen:** FILE COMMANDS MENU
- 5) **Enter:** Option #4 (**PACK FILE**)
- 6) **Screen:** PACK FILE — "Do You Want To Pack This File?" (Yes or No)
- 7) **Enter:** Y [CR]
- 8) **Screen:** PACK FILE — "Packing the File — Please Wait"
- 9) **Screen:** FILE COMMANDS MENU
- 10) **Enter:** F7
- 11) **Screen:** MAIN MENU

REFERENCE

PRINT (FILE) — The PRINT function allows you to generate hard copies of your data in form, list, report, or mailing label formats.

Print in Form Format

- 1) SELECT a file for current use (See SELECT)
- 2) **Screen:** MAIN MENU
- 3) **Enter:** Option #5 (PRINT RECORDS)
- 4) **Screen:** PRINT MENU
- 5) **Enter:** Option #1 (PRINT IN FORM FORMAT)
- 6) If you are currently working in conjunction with a SORT INDEX, the program will ask you if you want to print in sorted order.
- 7) **Screen:** CONDITIONALS
- 8) You will be asked if you want to print out only the records which meet certain conditions.
- 9) **Screen:** PRINT FORM — "Adjust the Printer"
- 10) Check to make sure the printer is ready. When it is, press [CR].
- 11) **Screen:** PRINT FORM — "Pause"
- 12) The records will begin to be printed. If you wish to pause, press the "P" key. When you want to continue, press [CR] once again.
- 13) The records will be printed out in FORM FORMAT (the same format in which they were entered). No attention will be paid to page breaks.
- 14) **Screen:** PRINT MENU
- 15) **Enter:** F7
- 16) **Screen:** MAIN MENU

Print in List Format

- 1) SELECT a file for current use (See SELECT)
- 2) **Screen:** MAIN MENU
- 3) **Enter:** Option #5 (PRINT RECORDS)
- 4) **Screen:** PRINT MENU
- 5) **Enter:** Option #2 (PRINT IN LIST FORMAT)
- 6) If you are currently working in conjunction with a SORT INDEX, the program will ask you if you want to print in sorted order.
- 7) **Screen:** CONDITIONALS

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- 8) You will be asked if you want to print out only the records which meet certain conditions.
- 9) **Screen:** PRINT LIST — "Select the Field You Want To Have Printed"
- 10) Move the long white cursor to the first field you want to have listed using the F1 and F3 keys. Choose it with the F5 key.
- 11) **Screen:** PRINT LIST — "Any More Fields To Select?" (Yes or No)
- 12) You are being asked if you want to list another field. You may list them in any order you desire. (YES)
- 13) **Screen:** PRINT LIST — "Select the Field That You Want To Have Printed"
- 14) Move the long white cursor to the next field you want to have listed using the F1 and F3 keys. Choose it with the F5 key.
- 15) **Screen:** PRINT LIST — "Any More Fields to Select?" (Yes or No)
- 16) You are once again being asked if you want to list another field. (NO)
- 17) **Screen:** PRINT LIST — "Adjust the Printer"
- 18) Check to make sure the printer is ready. When it is, press [CR].
- 19) **Screen:** PRINT LIST — "Pause"
- 20) The records will begin to be printed. If you wish to pause, press the "P" key. When you want to continue, press [CR] once again.
- 21) The records will be printed out in a LIST FORMAT.
- 22) **Screen:** PRINT MENU
- 23) **Enter:** F7
- 24) **Screen:** MAIN MENU

Print in Report Format

- 1) SELECT a file for current use (See SELECT)
- 2) **Screen:** MAIN MENU
- 3) **Enter:** Option #5 (PRINT RECORDS)
- 4) **Screen:** PRINT MENU
- 5) **Enter:** Option #3 (PRINT IN REPORT FORMAT)
- 6) If you are currently working in conjunction with a SORT INDEX, the program will ask you if you want to print in sorted order.
- 7) **Screen:** CONDITIONALS
- 8) You will be asked if you want to print out only the records which meet certain conditions.
- 9) **Screen:** PRINT REPORT — "Enter the Title of the Report"

REFERENCE

- 10) A title which will appear at the top of each page of the report (centered) can be typed in at this point. (No title = press [CR].) Titles limited to 35 characters.
- 11) **Screen:** PRINT REPORT — "Select the Field You Want To Have Printed"
- 12) Move the non-flashing bar to the first field you want to include in your report (use the F1 and F3 keys). Select it using the F5 key.
- 13) **Screen:** PRINT REPORT — "Select Decimal Digits"
- 14) You may define the number of digits you want on the right side of a decimal point (if this is a numerical field). (No digits? Press [CR].)
- 15) **Screen:** PRINT REPORT — "What is the Column Heading?"
- 16) You may place a column heading at the top of each field. The name can be no longer than the number of blanks in that particular field. Titles will be centered. (No title = [CR].)
- 17) **Screen:** PRINT REPORT — "Any More Fields You Wish To Include?" (Yes or No)
- 18) This question is asking if there are any more fields you want to include in this REPORT. (NO)
- 19) **Screen:** PRINT REPORT — "Page Width"
- 20) Enter the number of columns available when printing. (80 is standard.) The report will be centered in these columns.
- 21) **Screen:** PRINT REPORT — "Page Length"
- 22) Enter the number of rows (lines) available for printing. (66 is standard.) The program will leave five rows at the top and five rows at the bottom of each page BLANK. Centered in the blank space below the text will be a page number.
- 23) **Screen:** PRINT REPORT — ""Adjust the Printer"
- 24) Check to make sure the printer is ready. When it is, press [CR].
- 25) **Screen:** PRINT REPORT — "Pause"
- 26) The records will begin to be printed. If you wish to pause, press the "P" key. When you want to continue, press [CR] once again.
- 27) The records will be printed out in the REPORT FORMAT you specified.
- 28) **Screen:** PRINT MENU
- 29) **Enter:** F7
- 30) **Screen:** MAIN MENU

Print Mailing Labels

- 1) This function will allow you to print a maximum of four label lines on standard 3.5" X 15/16" mailing labels (one-up).
- 2) **SELECT** a file for current use (See **SELECT**)
- 3) **Screen:** MAIN MENU
- 4) **Enter:** Option #5 (PRINT RECORDS)
- 5) **Screen:** PRINT MENU
- 6) **Enter:** Option #4 (PRINT MAILING LABELS)
- 7) If you are currently working in conjunction with a **SORT INDEX**, the program will ask you if you want to print in sorted order.
- 8) **Screen:** CONDITIONALS
- 9) You will be asked if you want to print out labels only for records meeting certain conditions (See **CONDITIONAL STATEMENTS**).
- 10) **Screen:** PRINT LABEL — "Select Label Line One Field"
- 11) Move the long white cursor to the field you wish to place on the first line of the label (use F1 and F3). The maximum number of characters possible is 32. **SELECT** that field using the F5 key. If you want nothing printed on this label line, press F7.
- 12) **Screen:** PRINT LABEL — "Select Label Line Two Field"
- 13) Move the non-flashing cursor to the field you want to place on the second line of the label. Choose a field no longer than 32 characters using the F5 key.
- 14) **Screen:** PRINT LABEL — "Select Label Line Three Field"
- 15) **SELECT** the field for label line three in the same manner as the first two. Once again, the maximum character length is 32.
- 16) **Screen:** PRINT LABEL — "Select City Field"
- 17) Choose which field you want placed at the beginning of label line four. It should be no longer than 22 characters.
- 18) **Screen:** PRINT LABEL — "Select State Field"
- 19) Your choice here will be placed in the middle of label line four. It should be no longer than 2 characters.
- 20) **Screen:** PRINT LABEL — "Select Zipcode Field"
- 21) This is the last field which will be included on label line four. It can be no longer than 5 characters.
- 22) **Screen:** PRINT LABEL — "Adjust the Printer"
- 23) Check to make sure the printer is ready. When it is, press [CR].
- 24) **Screen:** PRINT LABEL — "Pause"

REFERENCE

- 25) The records will begin to be printed. If you wish to pause, press the "P" key. When you want to continue, press [CR] once again.
- 26) The records will be printed out in the LABEL FORMAT you specified.
- 27) **Screen:** PRINT MENU
- 28) **Enter:** F7
- 29) **Screen:** MAIN MENU

QUIT (PROGRAM) — This is the correct procedure for QUITTING (EXITING) the DATABASE MANAGER program.

- 1) **Screen:** MAIN MENU
- 2) **Enter:** Option #8 (QUIT) [CR]
- 3) The disk will begin operation and the process of saving information and then closing the files will be accomplished. This is an essential operation and will not be taken care of properly unless you QUIT the program properly.
- 4) **Screen:** (BLANK) — "Ready"

REPLACE (FIELDS) — Using the REPLACE capability, it is possible to change the value of one or more like fields without physically editing them one-by-one.

- 1) SELECT a file for current use (See SELECT)
- 2) **Screen:** MAIN MENU
- 3) **Enter:** Option #7 (FILE COMMANDS)
- 4) **Screen:** FILE COMMANDS MENU
- 5) **Enter:** Option #3 (REPLACE FIELDS)
- 6) **Screen:** REPLACE FIELDS — "Do You Wish To Enter a Conditional Statement?" (Yes or No)
- 7) You may use a CONDITIONAL STATEMENT to replace the contents of only the records which meet certain conditional criteria (See CONDITIONAL STATEMENTS). In this example we will replace the contents of the chosen field on ALL of the records.
- 8) **Screen:** REPLACE FIELDS — "Select the Field You Wish To Replace"
- 9) Move the non-flashing cursor (using the F1 and F3 keys) to the field whose contents you wish to replace.
- 10) Press the F5 key to SELECT that FIELD.

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- 11) **Screen:** REPLACE FIELDS — "Enter Replacement Value"
- 12) You will now be asked to enter a value to replace that which is currently in the field you've chosen. When the new value has been entered, press [CR].
- 13) **Screen:** REPLACE FIELDS — "Computer Replacing Fields Now"
- 14) The program will now make the replacements you've requested.
- 15) **Screen:** FILE COMMANDS MENU
- 16) **Enter:** F7
- 17) **Screen:** MAIN MENU

REVIEW (RECORDS) — The REVIEW function allows you to inspect your records. You may do this either consecutively (in entry or sorted order) or selectively (just one record).

Review All Records

- 1) SELECT a file for current use (See SELECT)
- 2) **Screen:** MAIN MENU
Enter: Option #3 (REVIEW/EDIT)
- 3) **Screen:** REVIEW/EDIT MENU
Enter: Option #1 (REVIEW/EDIT ALL RECORDS)
- 4) If you are using a SORT INDEX in relation to the file currently selected, you will be asked if you want to REVIEW the records in sorted order.
- 5) **Screen:** REVIEW — "Do You Wish To Enter a Conditional Statement?"
- 6) You may review only records which meet certain criteria by entering a CONDITIONAL STATEMENT at this point (See CONDITIONAL STATEMENTS).
- 7) **Enter:** Y (for YES) or N (for NO)
- 8) **Screen:** REVIEW
- 9) Use the F1 and F3 keys to go forward and backward through the records of your file.
- 10) If a record is longer than one screen, use F6 and F8 to scroll down and up.
- 11) Press F5 to EDIT this record (See EDIT)
- 12) Press F2 to DELETE this record (See DELETE)
- 13) Done with REVIEW: Press F7

REFERENCE

14) **Screen:** REVIEW/EDIT MENU

Enter: F7

15) **Screen:** MAIN MENU

Review Individual Record

1) **SELECT** a file for current use (See **SELECT**)

2) **Screen:** MAIN MENU

Enter: Option #3 (REVIEW/EDIT)

3) **Screen:** REVIEW/EDIT MENU

Enter: Option #2 (SELECT/EDIT INDIVIDUAL RECORD)

4) **Screen:** SELECT — "Select the Field You Want To Find a Match For"

5) Move the long, non-flashing cursor to the field you want to find a match for using the F1 and F3 keys. When you get to the correct one, press the F5 (SELECT) key.

6) **Screen:** SELECT — "Enter the Field You Want To Match"

7) Enter the contents you are trying to find a match for. Three types:

- * **Exact Field Match** — What you enter in the **SEARCH** field must **EXACTLY** match the field on the record, including trailing blanks.

- * **Beginning Field Match** — The computer will **SEARCH** for characters which **EXACTLY** match the characters you type in **BEFORE** an asterisk

- * **Match Anywhere (First 15 Characters)** — The characters you enter following an asterisk will be matched with characters in the same order **ANYWHERE IN THE FIRST 15 CHARACTERS OF THE FIELD.**

8) Press [CR] when finished entering match field.

9) Match found:

- * **Screen:** SELECT — "Found Match"

- * Press F5 to **EDIT** or F2 to **DELETE**

- * Press F3 to see if there are any further matches

10) No match found:

- * Skips to "End of File" prompt

11) **Screen:** SELECT — "End of File — No Further Matches"

Enter: [CR]

12) **Screen:** MAIN MENU

SEQUENTIAL (FILE) — The SEQUENTIAL file option allows you to create a file with a data structure which can be read by many word processors for the purpose of merging text and data in a letter or document.

- 1) **SELECT** a file for current use (See SELECT)
- 2) **Screen:** MAIN MENU
- 3) **Enter:** Option #7 (FILE COMMANDS)
- 4) **Screen:** FILE COMMANDS MENU
- 5) **Enter:** Option #6 (CREATE SEQ)
- 6) If you are currently using this file in conjunction with a SORT INDEX, you will be asked if you want your new SEQUENTIAL FILE to be created in sorted order (See SORTS).
- 7) **Screen:** CREATE SEQUENTIAL FILE — "Do You Want To Enter a Conditional?" (Yes or No)
- 8) If you wish your SEQUENTIAL FILE to be comprised only of records meeting certain conditions, you may enter a CONDITIONAL STATEMENT at this point. (NO)
- 9) **Screen:** CREATE SEQUENTIAL FILE — "Select the Field You Want To Output To the Disk"
- 10) Move the long, white cursor to the first field you want to include in your new SEQUENTIAL FILE. (Use the F1 and F3 keys.) Choose that field by pressing the F5 key.
- 11) **Screen:** CREATE SEQUENTIAL FILE — "Would You Like To Select Any More Fields?" (Yes or No)
- 12) You may transfer as many of the fields to your new SEQUENTIAL FILE as you like using this option. (NO)
- 13) **Screen:** CREATE SEQUENTIAL FILE — "Enter File Name"
- 14) Enter the name under which you want your SEQUENTIAL FILE to be stored on the data diskette. For name limitations see the CREATE section of this Reference Guide. Press [CR] when you finish.
- 15) **Screen:** CREATE SEQUENTIAL FILE — "Creating File"
- 16) The transfer of data may be a lengthy process.
- 17) **Screen:** FILE COMMANDS MENU
- 18) **Enter:** F7
- 19) **Screen:** MAIN MENU

REFERENCE

SELECT (FILE) — This function facilitates the choice of a file to be used during the current operation of the program.

- 1) **Screen:** MAIN MENU
Enter: Option #1 (SELECT FILE)
- 2) **Screen:** SELECT FILE — "Enter the Name of the File You Wish To Use"
Enter: Name of file
- 3) If you can't remember the file's name, press F7 (EXIT) and view the DIRECTORY through the FILE COMMANDS MENU.
- 4) Finished entering name: Press [CR]
- 5) **Screen:** MAIN MENU

SORT (FILE) — With the SORT feature you can create a SORT INDEX which will place records in alphabetic or numeric order when used in relation to a particular file.

Single Field Sort

- 1) SELECT a file for current use (See SELECT).
- 2) **Screen:** MAIN MENU
Enter: Option #4 (SORT RECORDS)
- 3) **Screen:** SORT MENU
Enter: Option #1 (CREATE SORT INDEX)
- 4) **Screen:** CREATE SORT INDEX — "Select the Field You Wish To Sort By"
- 5) Move the non-flashing cursor to the field you want to SORT by. Use the F1 and F3 keys.
- 6) Select the field using the F5 (SELECT FIELD) key.
- 7) A SORT INDEX will be created **in the computer's memory** by which the file in use will be referenced until another file is chosen or the program is exited.
- 8) **Screen:** SORT INDEX — "Do You Wish To Save This SORT INDEX on the Data Diskette?" (Yes or No)
- 9) This SORT INDEX can be saved for future use by answering Y (for Yes) to this question. (See "Recalling a Sort Index" in this section.)

REFERENCE

- 10) If you add records to a file after **SORTING** it, the program will automatically update the **SORT INDEX in the computer's memory**. It will also update the disk copy of the **SORT INDEX in use** if there happens to be one on the data diskette.
- 11) **Screen:** MAIN MENU

Multiple Field Sort

- 1) **SELECT** a file for current use (See **SELECT**).
- 2) **Screen:** MAIN MENU
Enter: Option #4 (SORT RECORDS)
- 3) **Screen:** SORT MENU
Enter: Option #3 (MULTIPLE SORTS)
- 4) **Screen:** MULTIPLE SORTS — "Select the Field To Be Sorted"
- 5) Move the non-flashing cursor to the field you want to **SORT** on using the **F1** or **F3** keys.
- 6) Select the field with the **F5** key.
- 7) **Screen:** MULTIPLE SORTS — "Any More Fields To Select?" (Yes or No)
- 8) The option is given to **SORT** on another field. (YES)
- 9) **Screen:** MULTIPLE SORTS — "Select the Field To Be Sorted"
- 10) Move the non-flashing cursor to the field you want to **SORT** on using the **F1** or **F3** keys.
- 11) Select the field using the **F5** (**SELECT FIELD**) key.
- 12) **Screen:** MULTIPLE SORTS — "Any More Fields To Select?" (Yes or No)
- 13) The option is once again given to **SORT** on another field. (NO)
- 14) A **SORT INDEX** will be created **in the computer's memory** by which the file in use will be referenced until another file is chosen or the program is exited. Priority will be given to the last field **SORTED**.
- 15) **Screen:** SORT INDEX — "Do You Wish To Save This **SORT INDEX** on the Data Diskette?" (Yes or No)
- 16) This **SORT INDEX** can be saved for future use by answering **Y** (for **YES**) to this question.
- 17) If you add records to a file after doing a **MULTIPLE SORT** on it, the program will automatically update the **SORT INDEX** of **ONLY** the last field which was **SORTED**.

REFERENCE

18) **Screen:** MAIN MENU

Recalling a Sort Index

- 1) **SELECT** a file for current use (See **SELECT**).
- 2) **Screen:** MAIN MENU
- 3) **Enter:** Option #4 (**SORT FILE**)
- 4) **Screen:** SORT MENU
- 5) **Enter:** Option #2 (**SELECT PREVIOUS SORT INDEX**)
- 6) **Screen:** **SELECT SORT INDEX** — "Select the Field of the Sort Index You Wish To Use"
- 7) Move the non-flashing bar to the field whose **SORT INDEX** you wish to use in relation to this file (**F1** and **F3** keys).
- 8) **SELECT** the field using the **F5** key.
- 9) The program will search the data diskette for a **SORT INDEX** which was created on that particular field. If it does not find one, a disk error will be indicated. Press **[CR]** to clear the error. You will be returned to the **MAIN MENU** where you will have to reload the file.
- 10) If the program does find a **SORT INDEX** which was created on the field you've chosen, it will load that **SORT INDEX** into the computer.
- 11) **Screen:** MAIN MENU

SUBFILE — Using this function, you can create a **SUBFILE** of an original file which is comprised of all, or part of the records the original file contained at the time it was broken out.

- 1) **SELECT** a file for current use (See **SELECT**).
- 2) **Screen:** MAIN MENU
- 3) **Enter:** Option #7 (**FILE COMMANDS**)
- 4) **Screen:** FILE COMMANDS MENU
- 5) **Enter:** Option #2 (**CREATE SUBFILE**)

REFERENCE

- 6) If you are currently using a **SORT INDEX** in relation to this file, you will be asked if you wish to **CREATE** your **SUBFILE** in sorted order.
- 7) **Screen:** **CREATE SUBFILE** — "Do You Wish To Enter a Conditional Statement?" (Yes or No)
- 8) The question on **CONDITIONAL STATEMENTS** will be asked. Your **SUBFILE** may be composed of only the records which meet certain criteria you have defined (See **CONDITIONAL STATEMENTS**). In this example, we will **CREATE A SUBFILE** of **ALL** records the original file contained.
- 9) **Screen:** **CREATE SUBFILE** — "Enter Subfile Name"
- 10) Enter the name under which you want this new file to be sorted on the data diskette. Follow the same rules for naming the file as defined in the **CREATE NEW FORM** section of this **REFERENCE**.
- 11) When you are finished entering the name, press [CR].
- 12) A **SUBFILE** will be transferred to the data diskette. Do not be alarmed if it takes a good deal of time! This can be a lengthy process.
- 13) **Screen:** **FILE COMMANDS MENU**
- 14) **Enter:** F7
- 15) **Screen:** **MAIN MENU**

APPENDIX "A"

GLOSSARY

APPEND	The process of adding new records to the end of an existing file.
APPLICATION	A specific task involving information processing which a company or individual wishes to perform in an automated fashion.
ASCII	American Standard Code for Information Interchange. A widely accepted code used to represent alphanumeric characters when communicating between computers, disk drives, display devices, printers, etc.
BACKUP	Storing one or more copies of a database or program as a precaution against its loss or destruction.
BASIC	Beginner's All Purpose Symbolic Instruction Code. A popular high-level language frequently used with microcomputers.
BOOT	The process of loading a program or an operating system into the computer from a diskette.
CALCULATED FIELD	A field whose value is derived from an equation consisting of numbers and/or values taken from other fields (as opposed to the value being entered directly from the keyboard).
CATALOG	(See DIRECTORY)
CHARACTER	A letter, number, or language symbol.
CONDITIONAL	A statement against which the computer will make a true/false decision (of inclusion or exclusion) in regards to a particular field of a record.
CONTROL KEY	An ordinary keyboard key which has been designated to perform a particular function in a computer program for the purpose of making the program easier to use.

GLOSSARY

APPENDIX "A"

CREATE	The process of establishing fields and designing a form which will become the basis for an informational database.
CURSOR	The flashing white rectangle displayed on the screen. It indicates where the next character typed will appear.
DATA	Items of information which may be stored in the memory of a computer system.
DATABASE	A collection of data.
DATABASE MANAGEMENT SYSTEM	Programs and documentation for setting up and using a database.
DATA DICTIONARY	A file specifically used for storing and retrieving information about the structures defined for a database system.
DELETE	The process of removing a character from a field, a field from a record, a record from a file, or a file from a diskette (See PACK).
DIRECTORY	A listing of all the files (regular & index) on a diskette.
DISKETTE	A removable magnetic recording media used to store information. Diskettes can contain programs or data.
EDIT	The process of making corrections and improvements to an individual record.
EXIT	The process by which a user terminates the operation of a particular part of a program, returning to a MAIN MENU.

APPENDIX "A"

GLOSSARY

FIELD	A portion of a record in which data of a particular type is stored.
FILE	A collection of records that are of the same type.
FORM	Any combination of items arranged in a chosen order and created to store information about one particular person, place, or thing. Becomes a record when filled out.
FORMAT	The general layout or arrangement of something, such as the design of a form.
FORMAT (DISKETTE)	The process by which a floppy diskette is made compatible with a computer.
FUNCTION KEYS	Keys on a computer keyboard which can be programmed through software to accomplish a specific task or purpose.
INDEX	A special-purpose structure within a file that does not contain data but, rather, facilitates locating particular records based on field values.
INITIALIZE (DISKETTE)	(See FORMAT — DISKETTE)
LOAD	The process of transferring a program or data from a diskette into the computer's memory.
MEMORY	Chips in a computer that are able to retain coded patterns representing instructions or data which are utilized by the other parts of the computer.
MERGE	The process of copying all, or part of a record (or number of records) from one file to the bottom of another file.
MENU	The list of functions that you can choose from at a given time.

GLOSSARY

APPENDIX "A"

PACK	The process of physically removing deleted records from a file (See DELETE).
PROGRAM	A set of instructions, arranged in sequential order, for directing the execution of a specific task, or the solution of a problem, by a computer.
QUIT	The process by which a user terminates the operation of a particular program and returns to the computer's READY mode.
READY	A screen prompt which signals the operator that the computer is waiting for a command to be entered.
RECORD	A form consisting of one or more fields which have been filled-in (to any degree) with information. If no information is present, the form is not a record. Like records are stored together in a file.
REPLACE	The process of substituting one set of characters in a given field for another.
RELATIVE FILE	A type of file which allows the records to be accessed in random order instead of sequentially.
REPORT	Information displayed in a columnar format (by field) with optional titles centered above each column and at the top of each page. Pages are numbered consecutively at the bottom. The length and width of the report as it appears on a sheet of paper are left to the operator's discretion.
REVIEW	The process of inspecting records one-by-one in either the order in which they were entered or a sorted order.
RUN	A BASIC language command which begins the execution of the program currently residing in the computer's memory.

SAVE	The process of transferring a program or data from a computer's memory onto a diskette.
SEQUENTIAL FILE	A file whose data is accessed by retrieving the first record and each subsequent record in order until the desired record is accessed.
SCROLL	The process of removing a line of information from a temporary display such as a monitor, then moving all other lines up or down so as to permit a new line of information to be displayed in the area vacated by the line that has been removed.
SORT	The process of placing the records of a given file in order (alphabetically or numerically) according to the values of one particular field.
WORD PROCESSOR	A software program which facilitates the entry, manipulation, storage, and display of words and numbers on a computer system.

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DATABASE MANAGER FILE STRUCTURE

APPENDIX "B" details the various structures of the disk files used in conjunction with the DATABASE MANAGER. They are standard Commodore relative and sequential files, and can be readily accessed by other BASIC and Assembly Language programs. With a proper understanding of BASIC and the structure of these files, you can create custom reports using the information in your database. A custom inquiry program can also be designed using the Sorted Index Files.

The DATABASE MANAGER program uses four different file structures in its operation. They are: 1) the Data Dictionary File, 2) the Number of Records File, 3) the Database File, and 4) the Sorted Index File.

FILE STRUCTURE #1

THE DATA DICTIONARY FILE

The Data Dictionary File contains most of the information ABOUT the database. It is a standard sequential file which contains information such as the record size of the Database File, the form that you see on the screen, the position of each field in the record, etc. The values are often stored in binary instead of character format.

In order to read a binary number in BASIC, you must convert it from character to ASCII using the ASC function. For instance, to read the record size off of the Data Dictionary, you could do the following:

```
INPUT#2,A$,B$  
RS = ASC(B$ + CHR$(0))*256 + ASC(A$ + CHR$(0))
```


Structure of the Data Dictionary File

BYTE NUMBER:

0-1	Record size of Database file
2	Number of relative records per Database record
3	Number of fields per Database record
4	Number of calculated field formulas
1 Byte/Field	Field size for each field
1 Byte/Field	X-Coordinate on screen for each field
1 Byte/Field	Y-Coordinate on screen for each field
1 Byte/Field	Low byte of address of field in the Database record
1 Byte/Field	High byte of address of field in the Database record
64 Bytes/Formula	Calculate fields of formulas (if any)
1-2500 Bytes	Actual character representation of the form that is displayed on the screen

FILE STRUCTURE #2

NUMBER OF RECORDS FILE

This is a sequential file which has only 2 bytes in it. These bytes represent the total number of records in the Database File. Due to the structure of Commodore sequential files, it was necessary to separate this from the Data Dictionary File in order to constantly update it.

FILE STRUCTURE #3

DATABASE FILE

This is a relative file which contains the information for each Database record. For Database records which are larger than 250 characters, the additional information is stored on subsequent relative records in 250 character blocks.

The information is stored in character format in sequential field order. For example:

BYTE NUMBER:

1-15	Field 1
16-40	Field 2
41-43	Field 3
44-80	Field 4
•	
•	
•	
1050-1057	Field 147

FILE STRUCTURE #4 SORTED INDEX FILE

This file contains the beginning record number (in binary) and the character representation of the sorted field (up to 15 characters). It is a standard sequential file. Sample:

BYTE NUMBER:

0-1	Number of records in Index
2	Size of sorted field
3-4	Record number of Database record
5-20	First field in sorted Index (e.g., "APPLE")
21-22	Record number of Database record
23-28	Second field in sorted Index (e.g., "BANANA")
29-30	Record number of Database record
31-46	Third field in sorted index (e.g., "CANTALOPE")

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**MIRAGE
CONCEPTS**

ADVANCED REPORT GENERATOR

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ADVANCED REPORT GENERATOR

USER'S MANUAL

for the Commodore 64



MIRAGE CONCEPTS

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Rev. B, May 1984

PREFACE

PREFACE

The **ADVANCED REPORT GENERATOR** is an extremely flexible accessory program for use with Mirage Concept's **DATABASE MANAGER**. It produces "special application" forms and reports to fill any need, be it business, school, home, or even hobbies.

Like the **DATABASE MANAGER**, it offers free-form design, and the flexibility as well as ease of use and control demanded by serious computer users.

This is not a "stand-alone" package. It uses only files created by the **DATABASE MANAGER**. You will find that the expertise you have gained designing and using the files you have created with the **DATABASE MANAGER** will be perfectly complimented with the **ADVANCED REPORT GENERATOR**. It has been designed to use the same commands, format, and processes you have used with your **DATABASE MANAGER** files. The time you have spent learning and developing your database system will only be enhanced by this supplementary program — the Mirage Concepts **ADVANCED REPORT GENERATOR**!

This User's Manual contains four basic sections:

In the **INTRODUCTION** you will find described the capabilities and uses of the **ADVANCED REPORT GENERATOR**. Please read this short section carefully. It contains information and guidelines necessary for full use of the program.

Next follows the **BEGINNING TUTORIAL**, containing three lessons. Here we will produce and save each of the two types of reports available with the **ADVANCED REPORT GENERATOR**. This section provides practical building blocks for your own special applications.

Third comes the **ADVANCED TUTORIAL**, in which we will manipulate the variety of special use features offered in the **ARG**. Fourth follows the **REFERENCE** section which allows quick access to all of the commands and procedures learned in the tutorial.

If you have not already done so, please take a moment to complete and mail the **WARRANTY** registration envelope in the back pocket of this manual. With this program registered in your name, you will receive product update information, new product announcements, and tips on using **MIRAGE CONCEPTS** software more efficiently.

PREFACE

We hope that your time spent with the Mirage Concepts **DATABASE MANAGER** and **ADVANCED REPORT GENERATOR** will be both useful and enjoyable.

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INTRODUCTION

ADVANCED REPORT GENERATOR STRUCTURE AND USES

The Mirage Concepts ADVANCED REPORT GENERATOR enables users of the Mirage Concepts DATABASE MANAGER to print two types of reports: COLUMNAR REPORTS and FORM REPORTS. Throughout our use of the program we will need to keep in mind just what these two types of reports are and how they are used. Before we explain these, however, we should first review the few technical terms we learned in the *DATABASE MANAGER'S User's Manual*. We will keep all technical terms to a minimum — even less than that. The terms we need to review here are not technical terms from the language called "computerese." They are simply labels to name certain parts of the "Database" you have already developed with your DATABASE MANAGER. Here already I have begun to use one of those terms, so we had better get straight to the words themselves — there are only a few.

Database Review

- 1) Form — A form is a piece of paper upon which is printed a number of titles prompting us to fill-in information desired by the user of the form. A form may also be the electronic page you drew on your computer screen when you "created a new form" for use with your DATABASE MANAGER.
- 2) Field — A field is the space following a title on a form in which we store the requested information. It also often refers to the data itself in that space after the title.
- 3) Record — Once you have filled in the "fields" on a "form," the page and the information contained on it become a record. It is a "record" of the information requested on the "form" for use by the person or agency that asked you to enter information in various areas of the "form" called "fields." Clear enough?
- 4) File — A file is a collection of records based on like forms. When you and your fellow employees, for instance, each fill out a form with information (in the appropriate fields, of course) that your employer needs (for some reason or another that only employers know about) those forms become a file of records that your employer may use for his or her mysterious purposes.

INTRODUCTION

- 5) Database — A file can also be called a "database," meaning a large systematic collection of bits of information, or "data." From a database, depending on its complexity, one might draw a number of subfiles, or manipulate the data in the file in a variety of ways.
- 6) Database Management System — Your DATABASE MANAGER is a database management system. It manipulates the data you have created according to your wishes. The Commodore 64 is your willing slave as it works under the commands of the DATABASE MANAGER, which is your overseer, so to speak, or the system by which you manipulate your database.
- 7) Reports — Reports are systematic presentations of information contained in your database files. You may do these yourself, by hand if you like, or you may command your computer to present them for you. You need only tell it what to report.

Advanced Report Generator Functions: Columnar and Form Reports

The above seven terms are all we need to review from those first presented in the *DATABASE MANAGER User's Manual*. They serve only to direct us to those parts of the system we are using. For use of the **ADVANCED REPORT GENERATOR** we need consider only two further definitions — the two types of reports we will produce.

- 1) Columnar Report — A Columnar Report is a systematic presentation of data arranged in columns down a page. Simple enough! Each column contains information from a specific field in the records of your file. Each line contains information from various designated fields in the record. A kind of chart is set up whereby you can look down the column for the individual record, and across the page to the specific column containing the data you need. Columnar reports may be as simple as a straight listing of selected fields from the records of a file, or as complex as a presentation with pagination, titles, column headings, special calculations, and special formatting of information for specific uses.
- 2) Form Report — Each record that a file contains may be reported individually on its own page. The information contained in the record can be reformatted (almost like making a new "form") to report that

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INTRODUCTION

data on its own in any style you choose. A Form Report may come in a variety of formats from a small four or five-line page to and beyond a legal sized brief. A mailing label is in effect simply a small form report. Careful manipulation of form reports can fulfill the most imaginative of needs.

FORM REPORT		COLUMNAR REPORT	
SALES RECORD		MONTHLY SALES	
ACCOUNT NUMBER: 0134	CREDIT FERENCE:	ACCT#	NAME
NAME: JANE DOE		0134	JANE DOE
ADDRESS: 34567 E. WEST STREET		0155	JOHN DOE
FORT HILLS CA 90767		0345	D.C. WASHINGTON
		0789	J.G. PUBLIC
PURCHASES		TOTALS	
DATE	AMOUNT		
1. 12/08/83	15.00		
2. 12/15/83	40.00		
3. 12/20/83	38.45		
TOTALS	93.45		
PAYMENT			
DATE	AMOUNT		
1. 12/20/83	32.45		
TOTALS	32.45		
TOTAL DUE:	61.00		

DEBIT	PAYMENT	BALANCE
93.45	32.45	61.00
2467.30	700.00	1767.30
5000.00	0.00	0.00
0.00	5000.00	5000.00
TOTALS	7561.15	5793.45
		1767.30

FEATURES AND BENEFITS

Once you have created your DATABASE files, and have sorted and/or edited them for reporting, you are ready to use the ADVANCED REPORT GENERATOR.

With it you will create and save report formats. And once you have saved them, you can return to them again and again. You may even create a number of different reports for use with one single DATABASE file!

Like the DATABASE MANAGER, the ADVANCED REPORT GENERATOR is limited only by your imagination. We at Mirage Concepts are constantly surprised by the creative systems designed by individual users

INTRODUCTION

of the DATABASE MANAGER. The ADVANCED REPORT GENERATOR adds to the number of possible applications.

In the tutorial lessons we will explore the following features:

Columnar Reports: titles, field headings, page numbering, sub-totals, summary reports, added calculations, totals.

Form Reports: free form design, variable page size, additional text fields, additional calculated fields, totals.

Sorting: ascending and descending order.

Conditionals and Matching: print selected records, match individual records.

Field Formatting: fixed decimal point, accounting format, floating dollar sign, text format.

Printer Commands: use any commands available on your printer.

THE PROGRAM DISKETTE

The Mirage ADVANCED REPORT GENERATOR program diskette can be found in the front, inside pocket of your binder. It is a standard 5.25", single-sided, double-density computer diskette. The ADVANCED REPORT GENERATOR program has been expertly copied on the diskette and a "write protect tab" has been affixed over the notch on the right-hand side to protect you from inadvertently writing over the ADVANCED REPORT GENERATOR program. **DO NOT REMOVE THE WRITE PROTECT TAB FOR ANY REASON!**

The Program Diskette Serial Number

At the top of your Program Diskette is a label upon which has been printed the Mirage Concepts logo and an ADVANCED REPORT GENERATOR heading. A serial number has also been stamped on it, allowing us to instantly identify what program you are using, when it was released, and what version it is. **DO NOT REMOVE THIS LABEL OR ALTER THE SERIAL NUMBER. IT WILL VOID YOUR WARRANTY.**

When communicating with Mirage Concepts concerning your program, always refer to the serial number stamped on the program diskette.

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How to Obtain a Backup Copy

A special copy protection system has been used to prevent the unlawful duplication of the ADVANCED REPORT GENERATOR. If you would like a back-up copy of the program diskette, enclose a check or money order for \$7.00 in the Warranty Registration Envelope when you return it to Mirage Concepts. A duplicate program will be rushed to you. Only one back-up copy will be issued for each package purchased.

How to Obtain a Replacement Copy

If a program diskette fails to perform properly at any time, and the problem can be isolated to the software, a new program diskette will be issued to you UPON RECEIPT OF YOUR DEFECTIVE DISKETTE. There is no charge for this service if the program is under warranty, but a copy of your sales receipt must accompany the defective diskette to verify the date of purchase. A service charge of \$10.00 must accompany any program diskettes out of warranty. USE THE REPLACEMENT DISK FORM IN THE BACK POCKET OF YOUR USER'S MANUAL FOR THIS PURPOSE.

How to Obtain a Program Update

There is always the possibility that an extremely complex program such as the ADVANCED REPORT GENERATOR will undergo a fair amount of upgrading in the years to come. These upgrades will be due to 1) programming error, or 2) user-requested enhancement. In the case of programming error, you will be entitled to an update free of charge. Enhanced versions of the program will be made available to current owners at a modest charge based upon the degree of program development. In either case you will be notified of any upgrade and the procedure for obtaining it, using the information received by Mirage Concepts on your Warranty Registration. PLEASE RETURN YOUR WARRANTY REGISTRATION IMMEDIATELY UPON OPENING YOUR COPY OF THE PROGRAM.

HINTS ON ADVANCED REPORT GENERATOR OPERATION

Considering the following hints will ease your use of the ADVANCED REPORT GENERATOR.

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- 1) As much as possible, the program keys have been programmed in the ARG to conform to their functions in the DBM. You will find these consistent throughout the program:

F1 = Previous (Field or Record)	F4 = Select Text Field
F3 = Next (Field or Record)	F6 = Select Calculated Field
F5 = Save, Select, Edit	
F7 = Exit or Quit	

- 2) In the unlikely case that you get hopelessly lost, keep pressing F7. Eventually you will end up back at the main menu. Some of the menus deep in the program may not indicate that F7 will exit from the functions they direct you to, but keep pressing F7 and eventually you will return to safety.
- 3) Using the "Shift Lock" key will freeze parts of your keyboard. Avoid using this key whenever possible.
- 4) Computers are extremely willing slaves, and this sometimes encourages us to take liberties with them that tax their abilities. The first rule of database management is "keep it simple." Do not set up fields for information that you do not need. And keep your fields short — the shorter they are, the more you will be able to put across a page in a columnar report, and the more records you will be able to store on a single diskette.
- 5) You now know the first rule of database management — add to that the second. **ALWAYS MAKE BACKUP COPIES OF YOUR DATABASE FILES AND REPORTS!** Backup copies of your data diskettes cost very little in time, energy, and money, and may save very much of all of them. Above all, backup copies cut down on dentist bills caused by grinding your teeth too often; they save on psychiatric bills run up from feelings of paranoia after your computer has aced you several times in a row; they may save you from marital problems which find their roots in late night or early morning confrontations over the computer in which your spouse just cannot understand your need for revenge. The easiest way to make a backup copy of your disk is to use the program called "MC Backup" which is included on your ARG program disk. Instructions for this program can be found at the back of this manual.

INTRODUCTION

- 6) Plan, write out, make models of your reports before you begin. Make sure you include in your planning all of the features you will want in the finished product. When designing form reports, especially, plot your reports on paper so that individual fields do not overlap.
- 7) Practice a few times creating simple reports. Work patiently — you may have to create a report several times to get it just the way you want it.
- 8) Leave room on your data diskette to store your report format. You can monitor the available space on your data diskette in two ways. The first, and most accurate, is to load the directory of your data diskette. To do so, you must first "quit" the Database Manager program, insert your data diskette into your disk drive, and type the following command:

LOAD "\$", 8 [CR]

The directory will load, and the screen will read "ready." Now type:

LIST [CR]

The directory will now list across the screen and will tell you at the bottom how many "blocks" you have free. On an empty disk you will have 664 block free for use. By comparing the available space listed on your directory with the maximum space allowed on an empty disk, you can figure out how much space you have available for storage. Each report you save will require only about 1 block of storage space, but still remember to leave yourself plenty of room for data manipulation and appending.

You may also calculate the space left on your diskette in a kind of rough and ready way. Begin by figuring that you have about 150,000 characters of storage on a single diskette. Divide into this number the total number of characters you have allotted for fields in your form. For instance, if you have allotted four fields of 25 characters each, add these together for a total of 100, and divide this total into 150,000. The resultant, 1500, is the maximum number of records in the file that uses this form that you can store on one single disk. Once again, remember to leave plenty of room for reports, subfiles, and sort indexes.

INTRODUCTION

- 9) You will notice in hint number 8 just above that two commands were listed to be typed into your computer keyboard. The pattern set here will be followed throughout this ARG User's Manual. Commands that you are to type step by step as we continue through each lesson will be listed separately on their own lines in **BOLD** characters exactly as they are to be entered. The commands are simple, and for the most part follow the pattern set by the DBM, but to ease use, and to make sure nothing is left unclear, we have set these commands apart so that you will not have to guess what command you should type. [CR] indicates "carriage return."

LOADING AND QUITTING

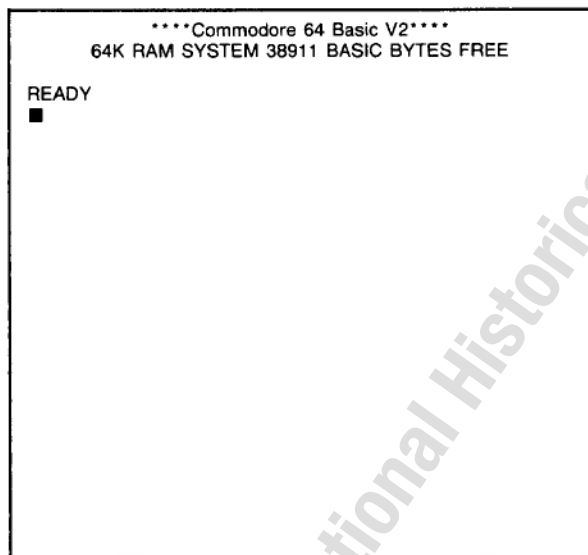
Before we continue on to the BEGINNING TUTORIAL, we should first review loading and quitting procedures. You are already familiar with Mirage Concepts procedures, but we ask that you take a few minutes to read through this section anyway. There are a few reminders along the way that may save you hours of time (and if time is money, then that too) by following the simple proper procedures.

Loading

To begin use of the ARG, you need only load the program, and when finished, remove the program disk and insert your DATABASE MANAGER data diskette into the disk drive. To complete the tutorial, you will be asked at various times to quit the ARG, load the DBM and create a new database file. To load follow these few steps:

- 1) Turn on your computer, disk drive, monitor and printer. The screen will look like this:

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If the screen does not show that you are "ready" to begin, check your connections, and if that fails, see your hardware service center.

- 2) Insert your ARG program diskette into the disk drive and type:

LOAD "*", 8 [CR]

Note: if you do not understand the way this command is listed here, see the explanation of our use of them in the preceding section entitled "Hints," hint #9.

- 3) When the loading program (boot program) has loaded in, the screen will read:

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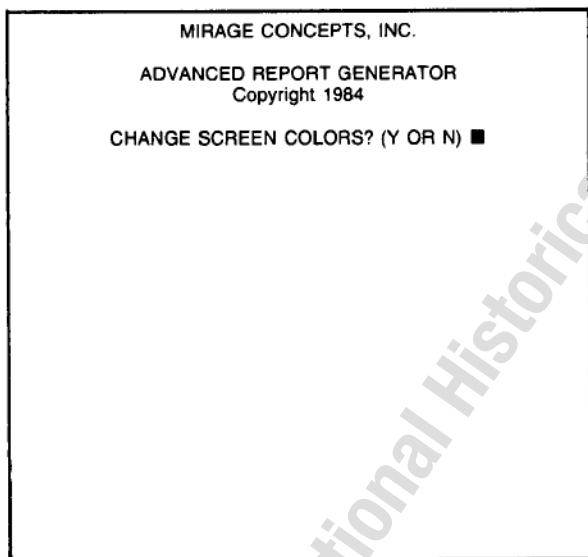
```
****Commodore 64 Basic V2****  
64K RAM SYSTEM 38911 BASIC BYTES FREE  
  
READY  
LOAD " ", 8  
  
SEARCHING FOR *  
LOADING  
READY  
■
```

Type:

RUN [CR]

- 4) A color change option will appear on the screen. You may change colors as often as you like before you answer that you do not want to change. The screen will look like this:

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If you desire to change screen color type:

Y

This screen will appear:

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ADVANCED REPORT GENERATOR
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COLOR TABLE

0 = BLACK	8 = ORANGE
1 = WHITE	9 = BROWN
2 = RED	10 = LIGHT RED
3 = CYAN	11 = DARK GRAY
4 = PURPLE	12 = GRAY
5 = GREEN	13 = LIGHT GREEN
6 = BLUE	14 = LIGHT BLUE
7 = YELLOW	15 = LIGHT GRAY

ENTER COLOR # AND PRESS [RETURN]

BACKGROUND COLOR? ■

The line at the bottom of the screen will direct you to enter the number of the background color your desire: Type:

(the number of the color you choose) [CR]

Another line will appear asking what text color you desire. Type:

(the number of the color you choose) [CR]

A final line will appear asking what border color you choose. Type:

(the number of the color you choose) [CR]

The Color Change Screen will reappear in the colors you have chosen. If you do not like the combination, type:

Y

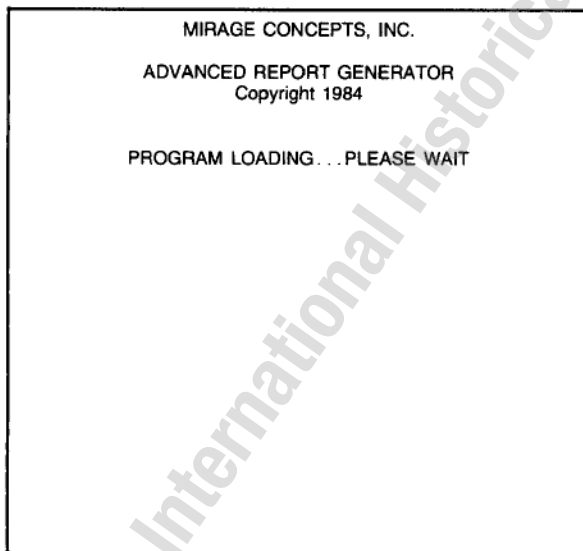
to tell the computer that you want to change colors once again. You will then go through the process described just above to re-choose your color combination.

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When you are satisfied with the color combination, type:

n

- 5) A Title screen will appear, looking like this:



The program itself is now loading, and will take about two minutes to complete.

- 6) When it has finished loading, a screen will appear asking you to remove your ARG program diskette and to insert your data diskette into the disk drive. The screen will look like this:

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MIRAGE ADVANCE REPORT GENERATOR *REMOVE THE MIRAGE PROGRAM DISK AND INSERT YOUR DATA DISK
PRESS RETURN WHEN YOU ARE FINISHED ■

Remember that the data diskette you insert into the disk drive must contain the database file you wish to use with the ARG.

Insert your data diskette, and type:

[CR]

The program will move you to the main menu — you are ready to begin using the **ADVANCED REPORT GENERATOR**.

QUITTING

WARNING! ALWAYS QUIT THE PROGRAM BY PRESSING OPTION 4 ON THE MAIN MENU BEFORE REMOVING YOUR DATA DISKETTE OR TURNING OFF THE COMPUTER. The "quit" function closes off your disk files, and does some miscellaneous housekeeping with the files you have used in your report. If you do not "quit" by selecting option 4 on the main menu, we cannot guarantee that either the report you have saved or the files you have used will be useable when you return to them. You wouldn't leave your refrigerator door open after you have fixed your lunch. Don't leave the files open when you are through with them — they might spoil! To leave the program, to "QUIT," type:

TUTORIAL

BEGINNING TUTORIAL

In the BEGINNING TUTORIAL we will learn and practice the most basic application of the ADVANCED REPORT GENERATOR. For simpler printings of either form or columnar reports, mailing lists, or simple listing of DATABASE MANAGER files, the print functions of the DBM itself offer the easiest and most direct ways of reporting information. The simplest applications of the ARG allow you to go beyond the DBM. The BEGINNING TUTORIAL of the ARG is really a series of lessons in "Advanced" printing methods. We assume that you are familiar with the printing functions of the DBM, and that you are ready to move on to more complex functions. If you need to review the printing procedures of the DBM, refer to lessons five and six of the *DATABASE MANAGER'S User's Manual*.

In Lesson One of the BEGINNING TUTORIAL we will create and save a columnar report that includes a four-line title, column headings, totals, and special formats for numeric fields.

In Lesson Two we will create and save a form report, including 80 column format, additional text fields, and totals.

In Lesson Three we will practice setting up sorted files for use with more complicated applications, asking for subtotals and creating a special type of columnar report — a "summary report."

SETTING UP

Before we start we need to set up a practice file for use in the BEGINNING TUTORIAL. We will assume that anyone who has come this far in their use of the DBM and ARG is familiar with the "Create New Form," and "Append" functions of the DBM. If you are not familiar with creating a new form, or appending, refer to Lessons One and Two of the *DBM User's Manual* while you create the file outlined below.

We will use the following form and file in the beginning tutorial. You will have to go back to your DBM program to create it and to append data to it, thus building a sample file to report. Be sure to enter the form exactly as it appears here, and check to make sure that all of the fields have the exact number of characters specified here. We will use these fields to set up our practice reports, and if the wrong number of char-

BEGINNING TUTORIAL

acters, the wrong calculations, or inaccurate data are entered into the file, the report you print will not match the examples printed in the lessons, and your fields may not fit the parameters we set for each report.

In the same way, when you do your own reports later, you will need to know the length of the fields you wish to print, and whether or not they will fit into the printing parameters you set at that time. For the time being, do not worry about whether or not the simple file you are to create here fits your specific database needs. Use it instead to discover and practice the capabilities and uses of the ARG. You will use principles you learn here in the beginning tutorial in ALL of the later reports that you create.

One last suggestion: as you go back to the DBM, **USE A DATA DISKETTE THAT DOES NOT CONTAIN ANY OTHER FILES ON IT.** Don't risk using a disk which contains a file that you have created to hold significant data.

1. Creating the Form

Create the form exactly as you see it here. Numbers indicating blank spaces are enclosed in parentheses. Fields are indicated by underline characters. The number of characters in each of the fields is indicated at the right of the form.

ADVANCED REPORT GENERATOR USER'S MANUAL

BEGINNING TUTORIAL

Line #	ENTER FORM NOW	Field Length
	CREATE NEW FORM *TYPE FIELD NAME (IF ANY) *F1 = UNDERLINE FOR FIELD LENGTH *F5 = FINISHED CREATING FORM *F7 = EXIT (DO NOT SAVE NEW FORM)	
1	(12 spaces) SAMPLE INVENTORY	
2	(blank)	
3	(5) Date(1)___/___/___ (4)Stock#(1)_____	2,2,2,4
4	(9) Item(1)_____	12
5	(blank)	
6	Item Cost(1)_____ (2)No. Received(1)_____	6,3
7	(5) Total Cost(1)_____	8
8	(blank)	
9	Rt. Price(1)_____ (2)Number Sold (2)_____	6,3
10	(5) Total Sale(1)_____	8
12	In Stock(1)_____ (2)Profit/Loss(1)_____	4,10

2. Entering the Calculations

After you save the form you have created, the menu will prompt you to enter calculations. Enter the following four calculations listed below. The words listed in parentheses should not be entered into your calculations — they are only included here to help you select the correct fields for calculations.

1. (Total Cost)f\$(8) = (Item Cost)f\$(6)*(No. Received)f\$(7)
2. (Total Sale)f\$(11) = (Rt. Price)f\$(9)*(Number Sold)f\$(10)
3. (In Stock)f\$(12) = (No. Received)f\$(7) - (Number Sold)f\$(10)
4. (Profit/Loss)f\$(13) = (Total Sales)f\$(11) - (Total Cost)f\$(8)

3. Title

When you have entered all four calculations, you will be prompted to name the file. Enter the following name for the file:

saminv [CR]

BEGINNING TUTORIAL

4. Appending

So that our reports look and calculate the same, enter the following twenty records into your form, thus building a file that we can report. Enter the data into the field indicated by the column heading below. You will notice that the information is given in an unsystematic order. This will give us a chance to manipulate it in various ways in our reports. Notice also that you did not need to enter information in four of the fields we created on the form, "Total Cost," "Total Sale," "In Stock," and "Profit/Loss." These will be filled with data calculated from the information you entered in the other fields.

Rec.#	Date	St.#	Item	Cost	# Rec	Price	# Sold
1.	12/19/83	432	shovel	8.99	10	14.49	8
2.	11/28/83	1030	sprinkler	19.33	14	28.29	6
3.	11/22/83	942	rake	6.79	25	9.99	23
4.	12/03/83	923	rake	8.09	25	12.49	20
5.	12/03/83	121	hoe	7.20	10	11.29	8
6.	12/10/83	1243	sprinkler	.89	150	1.89	95
7.	12/10/83	1244	sprinkler	.89	150	1.89	114
8.	12/20/83	1245	sprinkler	.89	150	1.89	143
9.	11/18/83	403	shovel	15.49	18	22.99	16
10.	11/08/83	820	rake	18.00	4	22.99	16
11.	12/03/83	32	hammer	7.20	20	11.50	17
12.	12/06/83	182	garden hose	4.49	35	8.99	28
13.	11/29/83	183	garden hose	5.70	25	10.29	22
14.	12/18/83	181	garden hose	7.29	30	13.50	21
15.	12/17/83	142	hammer	9.50	25	15.29	22
16.	12/03/83	185	garden hose	8.43	20	15.29	16
17.	12/02/83	435	shovel	12.20	25	18.49	23
18.	12/28/83	602	saw	13.09	10	23.29	8
19.	12/22/83	706	broom	5.15	30	8.99	21
20.	12/19/83	704	broom	7.21	30	9.99	25

This will give us more than enough information to work with, but just so there is no confusion, check to make sure that your first record looks like this:

ADVANCED REPORT GENERATOR USER'S MANUAL

BEGINNING TUTORIAL

REVIEW	
*F1 = PREVIOUS	*F2 = DELETE
*F3 = NEXT	
*F5 = EDIT	*F6 = SCROLL DOWN
*F7 = EXIT	*F8 = SCROLL UP
RECORD NUMBER 1	
SAMPLE INVENTORY	
Date __/__/__ Stock# __432	
Item _____	
Item Cost __ 8.99 No. Received __ 10	
Total Cost _____ 8.99	
Rt. Price __ 14.49 Number Sold __ 8	
Total Sale __ 115.92	
In Stock ____ 2 Profit/Loss _____ 26.02	

Once all of the data is entered correctly, return to the main menu of the DBM, and press:

8

to "Quit." (If you did not read the section on quitting, turn back a few pages and do so.)

We are now ready to proceed with Lesson One of the BEGINNING TUTORIAL.

LESSON ONE — CREATE COLUMNAR REPORT

In this lesson we will create a columnar report. You are already familiar with this type of report from the "Report Format" printing option in lesson five of your *DATABASE MANAGER User's Manual*. Here we will add features to the columnar reporting capabilities of the DBM.

For each field we select for printing in our report, we will designate a column heading (as you have done before). We will include special formatting for numeric fields, and for one of the numeric fields we will calculate a total for the whole file.

In addition to these features, we will also give the report as a whole a four-line title, and set up initial page and printer formatting options.

Finally we will print the report, as well as check the directory, and discuss re-printing a previously created report.

Selecting a File and Report

The "Main Menu" of the ARG should be on the screen when you begin. After you have loaded the program, selected your desired color combination, and inserted a data disk with our "saminv" file on it into the disk drive, the screen should look like this:

MIRAGE ADVANCED REPORT GENERATOR

- 1) CREATE NEW REPORT
- 2) SELECT PREVIOUS REPORT
- 3) DIRECTORY
- 4) QUIT

ENTER THE NUMBER OF THE COMMAND ■

TUTORIAL

LESSON ONE

These are the four main options in the ARG. In this and the next lesson we will concern ourselves primarily with option #1. When we are done with each lesson we will go back and select option #2. "SELECT PREVIOUS REPORT." This option is simple to operate, as you will see. If you need to check the spelling or arrangement of the file on the disk, select option #3, "DIRECTORY." Again, you are familiar with this option from your use of the DBM. A couple of times in these first two lessons we will go back to the directory to see how the program stores reports and how they can be recalled.

Now let us move on to creating our first report. To get us started creating a new report, type:

1

A new screen will appear, prompting you to select the type of report you wish to create. It will look like this:

CREATE NEW REPORT
1) COLUMNAR REPORT 2) FORM REPORT
ENTER THE NUMBER OF THE COMMAND ■

In this first lesson we will create a "COLUMNAR REPORT," so again type:

1

This screen will appear:

CREATE NEW REPORT
*ENTER THE DATABASE FILE NAME YOU WISH TO USE
ENTER FILE NAME ■

In this and the next lesson we will use the file we created specifically for the BEGINNING TUTORIAL. Notice that the menu above does not specify the number of characters in your file name. Here it literally "goes without saying" that you cannot enter a name longer than ten characters, for the simple reason that you were not able to save a name longer than ten characters when you created the file with the DBM. To enter the name of the sample inventory we created for this lesson in the prompt line, type:

saminv [CR]

This menu will appear:

SELECT REPORT OPTIONS 1) USE SORT INDEX 2) USE CONDITIONAL STATEMENT 3) USE MATCH FIELD 4) NO MORE SELECTIONS
ENTER THE NUMBER OF THE COMMAND ■

We will save the options on this screen for Lesson Three of the BEGINNING TUTORIAL. For now, select option #4, "NO MORE SELECTIONS," by typing:

4

We are now ready to begin setting up our report. Thus far we have told the program that we want to create a columnar report, using the file we created called "saminv," and that we do not want to use a sort index, conditional statement, or a "match field" condition.

Selecting and Formatting Fields

The following menu should be on your screen:

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LESSON ONE

CREATE NEW REPORT	
*SELECT FIELD YOU WISH TO USE	
*F4 = TEXT FIELD	*F6 = CALC FIELD
*F1 = PREVIOUS	*F5 = SELECT
*F3 = NEXT	*F7 = EXIT
SELECT FIELD 1 ■	
SAMPLE INVENTORY	
Date ■/■/■ Stock # _____	
Item _____	
Item Cost _____	No. Received _____
Total Cost _____	
Rt. Price _____	Number Sold _____
Total Sale _____	
In Stock _____	Profit/Loss _____

From this screen we will begin selecting fields for our report. Each time we select a field, we will move to another screen asking us to choose the format for the data in the field. For each field that we select we will have to go through the same process. Do not worry about memorizing that process at this time. The menu on the screen will lead you through each part of the process. The process is more complicated than the selection process of the DBM, but remember — you only have to do it once! When you are finished, and have saved the report, you can go back to it again and again.

You should be familiar with most of the screen from your use of the DBM. For example, you know the standard operation for moving through the fields of your form with the F1 and F3 keys, and selecting the one you want to print with F5. The only two options you are not familiar with are "F4 = TEXT FIELD," and "F6 = CALCULATED FIELD." The "TEXT FIELD" option is used only when creating Form Reports, and we will cover the "CALCULATED FIELD" option in the ADVANCED TUTORIAL, Lesson Four. For now, ignore these two options. We will concentrate first on those features we are familiar with. The processes we use here will be relatively easy to follow, and once we have mastered them, we will go on to more complicated things.

LESSON ONE

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For this report we will select three fields for printing: "Stock #," "Item," and "Profit/Loss." Each time we select a field we will have to choose a format, and answer a series of questions regarding it. Let's begin. The number "1" is located in the prompt line, indicating that we are selecting our first field.

In the screen listed above, and on your monitor's screen, an inverse cursor should be stationed in the first field of the form. Using F3, move the cursor to the "Stock #" field, and press F5 to select it for printing. You should be familiar with this process from your DBM program. This screen will appear:

CREATE NEW REPORT *NUMBERS LISTED IN 1) FIXED DECIMAL DIGITS 2) ACCOUNTING FORMAT 3) TEXT FIELD — NO NUMBER FORMATTING
ENTER THE NUMBER OF THE COMMAND ■

Before we choose one of the formatting options listed on this screen let's first run through a quick explanation of the uses of each of them.

1. The **FIXED DECIMAL DIGITS** option will set the number of digits you want to the right of a decimal point in the column holding the field you have selected. For instance, if you have a calculation for which you need very precise records, you might set the fixed decimal digit at 4. When the numbers were printed they would look like this, again for example, 46.9876. You will also use this option when formatting numeric fields that do not contain dollar values, and for which you do not want a decimal point.

2. **ACCOUNTING FORMAT** will consistently set the decimal in your numeric field at two digits, as if you were working with standard computations in dollars and cents. Accounting format will look like this when printed: 46.98. Accounting Format will also add commas in the appropriate places when the amount in the field exceeds 999.

3. **TEXT FIELD** formatting is, as the name implies, for non-numeric "text fields." We will use this for all fields from our form that have alphabetic texts, and, as we shall see, we will not be allowed to ask for numeric formatting extras on these fields like "totals." The "text field" formatting option on the above screen should not be confused with the "Text Field" we choose by pressing F4 on the field selection menu.

Note: Both Fixed Decimal and Accounting Format will add characters to those already contained in the field. Make sure that the field you created with the DBM is long enough to include the added decimal points and commas. If it is not long enough to hold these extra characters, characters will be dropped off of the left end of the field. Thus if the number you have in an eight character field is 89765436, when you add a decimal point to it, it will read on the report 97654.36. The computer will continue to retain the whole value in its memory despite the fact that it will not print all of the data characters, and if you request totals later the whole value will total correctly. Again, however, even the total cannot exceed the number of characters in the designated field. The moral of the story is — always leave plenty of room in calculated fields. You will notice that the calculated fields on our form are long enough to handle any additional characters we ask for. Later on we will also ask the computer to put dollar signs in certain fields. If you desire these, you must also leave room in the field for them. This, of course, is less critical than the room needed for the data characters themselves.

Now, back to our report. We have selected "Stock #" as our first field to report. This is a numeric field, but it does not contain dollar amounts, so select "FIXED DECIMAL" by typing:

1

The following menu will appear asking us to set the number of digits we desire to the right of the decimal point.

CREATE NEW REPORT
*ENTER THE NUMBER OF DECIMAL DIGITS FOR THIS FIELD BELOW (0-7)
ENTER THE NUMBER OF DIGITS ■

For this field we do not need a decimal point, so type:

0 [CR]

You may place, as the menu indicates, up to seven digits to the right of the decimal.

The second menu that helps us format each field will appear:

CREATE NEW REPORT 1) FLOATING DOLLAR SIGN 2) TOTALS ON THIS FIELD 3) COLUMN HEADING 4) NO MORE SELECTIONS
ENTER THE NUMBER OF THE COMMAND ■

We do not want dollar signs in this column, since it holds a stock number, nor do we need totals. We only need column headings. Select option #3, type:

3

This screen will appear:

CREATE NEW REPORT *ENTER COLUMN HEADING BELOW *MAX CHARACTERS = FIELD LENGTH
ENTER TEXT
■

Notice that the cursor is blinking in the form area of the screen. Unlike the DATABASE MANAGER, in the ARG we will enter all headings and titles in the text area, because in some instances the heading you enter will not fit in the prompt line.

Column headings, however, work on the ARG just as they do on the DBM. As the menu says, your heading can only be as long as the field you have chosen to report. Our "Stock #" field has a four-character length, so we may enter a heading extending only four characters. Enter the following heading:

St.# [CR]

Before you press return ([CR]) the screen should look like this:

<p>CREATE NEW REPORT</p> <p>*ENTER COLUMN HEADING</p> <p>* MAX CHARACTERS = FIELD LENGTH</p>
<p>ENTER TEXT</p> <p>St.# <input type="text"/></p>

When you press return ([CR]), this screen will reappear, asking if you need to select any other formatting options.

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CREATE NEW REPORT 1) FLOATING DOLLAR SIGN 2) TOTALS ON THIS FIELD 3) COLUMN HEADINGS 4) NO MORE SELECTIONS
ENTER THE NUMBER OF THE COMMAND ■

If you had selected "accounting format" for this field instead of "fixed decimal," or if we had needed a total on the fixed number, we might have chosen more than one option from this menu. We will come back to the other options on this menu later. We have exhausted our options for the "Stock #" field, so we must select option #4, "NO MORE SELECTIONS." Type:

4

and the following screen will appear:

CREATE NEW REPORT *ANY MORE FIELDS TO PRINT OUT?
ENTER (Y) FOR YES OR (N) FOR NO ■

You are familiar with this kind of question from your use of the DBM, and we do want to select further fields, so type:

Y

You will be brought back to this screen where we must once again select a field for our report.

CREATE NEW REPORT *SELECT FIELD YOU WISH TO USE *F4 = TEXT FIELD *F6 = CALCULATED FIELD *F1 = PREVIOUS *F5 = SELECT *F3 = NEXT *F7 = EXIT	
SELECT FIELD 2 ■	
SAMPLE INVENTORY Date ____/____/____ Stock # ██████ Item _____ Item Cost _____ No. Received _____ Total Cost _____ Rt. Price _____ Number Sold _____ Total Sale _____ In Stock _____ Profit/Loss _____	

Notice first of all that the inverse cursor is now stationed in the Stock # field. Each time you select a field, the cursor will remain in that field until you select another field. This will help you keep track of which field you last selected. Also notice that a "2" is now in the prompt line, indicating that we are selecting our second field. The next field we want to select for reporting is the "Item" field. Move the inverse cursor to the item field and select it using F5. Type:

F5

In the next menu, you will again be offered the choice of fixed decimal digits, accounting format, or text field. This time we have a text field, so select option #3 "TEXT FIELD," by pressing:

3

The next field formatting screen will appear:

CREATE NEW REPORT 1) FLOATING DOLLAR SIGN 2) TOTALS ON THIS FIELD 3) COLUMN HEADING 4) NO MORE SELECTION
ENTER THE NUMBER OF THE COMMAND ■

Again, we do not need a floating dollar sign or totals on this field, as this screen offers. But before we set the column heading, select option #1 and #2. Because we have chosen a text field, the program will deny our request for dollar signs and totals. When you select option #1 and #2 after you have selected "text field," this screen will appear:

CREATE NEW REPORT
*OPTION NOT AVAILABLE
PRESS RETURN TO CONTINUE ■

Press return ([CR]) and you will be brought back to the previous menu from which we will be allowed to set column headings. We do need a column heading, so select option #3, type:

3

And this screen will appear:

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CREATE NEW REPORT
*ENTER COLUMN HEADING BELOW *MAX CHARACTERS = FIELD LENGTH
ENTER TEXT
<input type="checkbox"/>

Enter the following as a column heading:

Item [CR]

The menu will again offer you the choices of floating dollar sign, total, and column heading. Since we have exhausted our options on this menu, enter "No More Selections," by typing:

4

The next menu will appear, asking whether you have any more fields to print out. We do have one more, so type:

Y

and we are back to field selection menu:

CREATE NEW REPORT *SELECT FIELD YOU WISH TO USE *F4 = TEXT FIELD *F6 = CALC FIELD *F1 = PREVIOUS *F5 = SELECT *F3 = NEXT *F7 = EXIT	
SELECT FIELD 3 ■	
SAMPLE INVENTORY Date ____/____/____ Stock # ____ Item _____ Item Cost _____ No. Received ____ Total Cost _____ Rt. Price _____ Number Sold ____ Total Sale _____ In Stock _____ Profit/Loss _____	

We now have one last field to select for printing. Move the cursor, using the F3 key down to the last field of our form, "Profit/Loss." Select it using F5. You will now be asked how you want the field formatted — "fixed decimal point," "accounting format," or "text field." Because we are working with a dollar amount, select option #2, ACCOUNTING FORMAT. Type:

2

You will now be asked, as you have before, whether you want "floating dollar signs," "totals," and "column headings." The first two options are available to us with the "profit/loss" field because we have chosen a numeric field. The menu will now be on the screen:

CREATE NEW REPORT 1) FLOATING DOLLAR SIGN 2) TOTALS ON THIS FIELD 3) COLUMN HEADING 4) NO MORE SELECTIONS
ENTER THE NUMBER OF THE COMMAND ■

With this field we will use all of the available options. First select option #1, **FLOATING DOLLAR SIGN**. This will put dollar signs in the fields in the "profit/loss" column as they are printed down the field. Type:

1

and you will be told that the program has accepted that option for this field. Earlier it did not accept this option, because we were then working with text fields. The screen will look like this:

CREATE NEW REPORT
*FLOATING DOLLAR SIGN ENABLED
PRESS RETURN TO CONTINUE ■

When you press return ([CR]), you will return back to the previous menu, leaving the options of "TOTALS ON THIS FIELD," and "COLUMN HEADING" from which to choose. This time we will ask for totals, which will add up the column for us, and thus give an overall "profit/loss" figure for our whole file. Type:

2

A screen will appear like this, announcing that the program has accepted our selection of totals on this field:

CREATE NEW REPORT
*TOTALS WILL BE MADE ON THIS FIELD
PRESS RETURN TO CONTINUE ■

Press return and you will be able to select the last option on the formatting option screen, "COLUMN HEADING." Select option #3, type:

3

The following screen will appear, just as it has for each of the fields we have selected for our report, prompting you to enter in a column heading. Type the heading that you see on the screen below. Before you press return ([CR]) to enter the heading, the screen should look like this:

CREATE NEW REPORT *ENTER COLUMN HEADING BELOW *MAX CHARACTERS = FIELD LENGTH
ENTER TEXT
Pro/Loss■

When your screen looks like this, press return ([CR]) to enter your heading. You will then be asked whether you would like to select additional fields. For this report we do not want additional fields, so type:

n

You will see on your screen a menu asking for "page formatting" options. Before we go on to this next step in the report creation process, let's review what we have done up to this point. Let the computer sit for a moment — don't press any keys! — while we review.

We have thus far created a report on a fictional and probably unprofitable hardware store. Our report will list from each record the stock number, the item, and the profit or loss on each item in the file. For our stock number field, we selected a fixed decimal format and set it at 0, since

we did not want a decimal point, and we gave a column heading for it. We formatted our item field in a text format, and we gave it a column heading. For our profit and loss field we first asked for accounting format, since we are working with dollars and cents, and then we asked for a floating dollar sign down the column. We then asked that the program add the amounts from each record in the profit and loss column and give a total, which it agreed to do because we had designated it a numerical field, rather than a text field. Finally we gave our last field a column heading. Now let's go on.

Page and Printer Formatting

The last few commands that are needed for setting up a columnar report all refer to the page and printer formatting and information. Everything that is consistent on each page of the report is covered in this last section, from page formatting — where we will tell the computer what kind of title we want on each page, and whether we want page numbering, or pagination — to special commands for printers. The following screen should be on your monitor:

CREATE NEW REPORT	
*PAGE FORMATTING OPTIONS	
*PRESS RETURN FOR DEFAULT VALUE	
*OR ENTER VALUE AND PRESS RETURN	
ENTER INFORMATION	
PAGE NUMBERS (Y OR N)	Y
PAPER PAGE LENGTH (IN ROWS)	66
PRINTED PAGE LENGTH (IN ROWS)	56
PAPER WIDTH (IN COLUMNS)	80

The DBM allows you to choose two of the options listed on this screen, but in a different way. You will recall that when you create a report with the DBM, you are prompted to enter a page length and a page width. For example your *DBM User's Manual* instructs you to choose 56 lines or rows on a 66 line standard page and 80 columns for a standard printer and page.

In the above screen those same numbers, or format parameters, are given as "default" values. This means that the ARG is set up to print out a standard page without making us set up each and every standard report. If, when you come to this screen, you simply were to press return ([CR]), you would, as the menu says, be selecting the default values for your page formatting. You would be asking the printer to put numbers on the page, print 56 lines on a 66 line standard sheet of paper (thus giving you a five line top and bottom margin), and center your columns within the standard 80 column page width. Your report would look just like one you created with the DBM.

These formatting parameters fit our simple report well, so we will not change them very much. But just so that we see how to change the parameters, let's change one or two of them. The cursor should be blinking on Y, the default value for page numbering. Since we only have twenty records in our "saminv" file, our report will not be longer than one page. Let's then tell the program that we do not want page numbering on the report. To do so simply type:

n [CR]

and the cursor will now blink in the next row on 66. For the tutorial we will assume that you are using standard computer paper. To leave the next format option, "paper page length," at its default, simply press return ([CR]). The cursor should now be blinking on 56 in the "printed page length" row. Let's change this format to make our top and bottom margins smaller. Type the following to set the printed lines at 60:

60 [CR]

NOTE: Like the DBM, the columnar report of the ARG is set up to give margins on the top and bottom of the page. If you were to choose 66 lines for the printed page of your report, you would be telling it not to put margins on the top and bottom of the page. If you do this, the pro-

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gram will retaliate against your attempt to confuse it. Most likely, it will feed out about four blank pages before it begins to print. To keep your computer happy and unconfused, **NEVER ENTER A PRINTED PAGE LENGTH LONGER THAN 64 ROWS**. This will leave at least one row on the top and bottom margin, you will save yourself pages of paper, and will keep your computer happy.

The cursor should now be blinking on the 80 in the last option, **PAGE WIDTH**. In Lesson Six we will discuss printer commands, with which we will be able to set the printer at condensed or expanded print, or bold faced type, or whatever else your particular printer will do. For now we will leave our printed page format at the standard 80 column width, type:

[CR]

And the following menu will appear:

CREATE NEW REPORT *DO YOU WISH TO ENTER A HEADING FOR THIS REPORT?
ENTER (Y) FOR YES OR (N) FOR NO ■

Again, you may have noticed that with the DBM you also gave headings for reports. With the ARG the process is a little more complicated. If you did not want a heading you could simply press "n," and you would be moved on. But here we do want a heading, so type:

Y

and a menu will appear giving you the parameters for the reporting heading. It looks like this:

CREATE NEW REPORT *ENTER UP TO 4 LINE HEADING BELOW *MAXIMUM LINE LENGTH = 80 CHAR *[RETURN] = END OF LINE *[F5] = END OF HEADING
ENTER TEXT
■

With the DBM you can enter a title up to 35 characters long on one line. In the ARG, as you can see on the menu of this screen, the allowance is much broader. You are allowed up to 80 characters in each of the four lines. You do not need to use all four lines. When you press return ([CR]) the cursor will jump to the next line of the title, and when you finally press F5, the title will be saved. Try this by typing in the following four lines. The cursor should be blinking in the first line of the screen, just below the menu in the screen above. Type these lines:

**Hardware Store [CR]
Test Report [CR]
Columnar Format [CR]
Four Line Title**

Notice that we did not enter the last return ([CR]). If we enter all four lines, the return ([CR]) indicating the end of the last line will act in place of the "F5" to enter the heading. Your screen should look like this:

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CREATE NEW REPORT *ENTER UP TO 4 LINE HEADING BELOW *MAXIMUM LINE LENGTH = 80 CHAR *[RETURN] = END OF LINE *[F5] = END OF HEADING
ENTER TEXT
Hardware Store Test Report Columnar Report Four Line Title■

If your screen looks just like this press:

[CR]

to save the title. You have told the program the following: take these four lines and center each of them on each of the pages that you print with this report. Notice that we did not press F5 to enter the title. You must press return at the end of each line. You will only use F5 to enter the title if you do not use all four available lines.

This screen should now be showing on your monitor:

CREATE NEW REPORT	
*DO YOU WISH TO CHANGE THE PRINTER INFORMATION BELOW?	
ENTER (Y) FOR YES OR (N) FOR NO ■	
PRINTER SECONDARY ADDRESS	7
INITIAL PRINTER CODE	NONE

Here, just as we found with the page formatting options we set a few pages back, the ARG has set default values for the printer information listed on this screen. These values as set meet the requirements for printing with the Commodore 1525 printer and any properly interfaced printer that emulates the 1525. Let's take a moment to look at each of the printing values listed here:

1. **Printer Secondary Address:** A secondary address is a signal sent to the printer (or interface) to specify which print mode it should use. Depending on which printer or interface you use, this signal — indicated by a number, as shown on the screen above — will determine whether, for instance, the printer will send an automatic line feed, whether it will print in upper or lower case, or both, or in graphics mode, etc. Your printer or interface manual will tell you which secondary address you should use for your specific hardware configuration. As the screen indicates, the ARG defaults to a secondary address of 7, which is the correct address for both the Commodore 1525 and 1526 printers (among others).

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2. Initial Printer Code: The ARG allows you to set your printer initially in a certain mode, depending only on the limitations of the specific printer. For instance, we might want to tell the printer to print in correspondence quality print, if it is a dot-matrix printer; or we might want condensed or expanded print. In Lesson Six we will work through how to send an initial printer command, as well as how to change that command within a single report page.

Note: If you are using an early Commodore 1526 printer or a Commodore 4023 or other IEEE printer, see Appendix 4 of this manual.

If you desire to change these options you must first press "y", for yes, and you will find that the cursor jumps down to the "7" opposite "PRINTER SECONDARY ADDRESS." For each line you will need to enter the new value and return ([CR]) to move the cursor to the next line. When you have finished changing the printer values, the program will move you on to one of the last three screens in the creation of your report.

For our purposes here, we will assume that we are all using a Commodore 1525 printer or a parallel printer interfaced to emulate the 1525. If you have another printer and interface combination, set the printer information to account for your configuration. If you have a 1525 press:

n

The menu that should now be on your screen will ask you if you wish to save this report for future use. So that we can see later how to "SELECT PREVIOUS REPORT" from the main menu, we will now answer that we do want to save this report. Press:

y

You will now be asked for a name for this report so that it can be stored on your data disk, and recalled later. Like the DBM, the ARG will allow a ten character name. You should be familiar with giving file names from the DBM, and the ARG uses the same procedure for reports.

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Later you will see on your directory, that the ARG stores report names with a ".rpt" following the name you give to your report. Even though the program indicates which of the names on the directory is a datafile and which is a report, you may want to indicate what kinds of reports you are saving in the name you give it.

Enter this name to indicate that we are saving a columnar report for our file called "saminv":

crsaminv [CR]

We are now ready to print, and the final screen allows us two options — to print or not to print, that... — I have resisted the obvious temptation.

Before we print out the report we have been so long in creating, we ought to take a moment to check and make sure everything looks correct on our disk, and just to familiarize ourselves a little more with the ARG. Type:

F7

and you will be brought back to the main menu. Do not worry about losing your report, you will recall that it is stored under the name "crsaminv."

Directory and Select Previous Report

The main menu gives you four options: **CREATE NEW REPORT**, which you have just completed, **SELECT PREVIOUS REPORT**, which we will use in a moment, **DIRECTORY**, and **QUIT**. Type:

3

to bring up your **DIRECTORY**. If you have used a new disk for this tutorial, the following four listings should appear on your directory.

saminv.dd
saminv.nr
saminv.df
crsaminv.rpt

The first three listings of "saminv" are the files you created with your DBM for this tutorial. The designations following the file name (.dd, .nr, and .df) are explained in Appendix B of your *DBM User's Manual*. ".rpt" following the report name "crsaminv", indicates, simply, "report." As the menu screen says, press return ([CR]) and you will be returned to the main menu.

We are finally ready to print our report. Since we have a report already created and saved on the disk, we can use option #2 on the main menu, "SELECT PREVIOUS REPORT." Press:

2

and you will be asked to enter the name of the report that you wish to use. We have only one report stored, so type in the prompt line the following:

crsaminv [CR]

Here the screen that we skipped over quickly at the beginning of this lesson has once again come back to plague us. Again, let's avoid the issue in this lesson — we will save sorts for Lesson Three, and conditionals and match statements for Lesson Four. Just so that we know that we are all at the correct place, the screen looks like this:

SELECT REPORT OPTIONS
1) USE SORT INDEX
2) USE CONDITIONAL STATEMENT
3) USE MATCH FIELD
4) NO MORE SELECTIONS

ENTER THE NAME OF THE COMMAND ■

For now, select option #4, NO MORE SELECTIONS. Type:

4

and we will be brought back to the screen we left when we last had the chance to print — to print or not to print...

One more time let's delay just a moment. Notice that when we choose option #4 from the "soft-conditional-match" menu, we jumped directly to the final print menu. **YOU ARE NOT GIVEN THE OPTION TO CHANGE THE REPORT.** If you desire to change the report in some way you simply must create a new report. You must make sure that all of the options you desire on a given report are included with it when you first create. You may want to make several different reports for a specific Database file. This final screen should be on your monitor:

PRINT REPORT
*PRESS RETURN WHEN PRINTER IS READY
*F7 = EXIT
■

Check to make sure your printer is ready — all connections good, power on, all lights lit in the proper places, paper inserted — and press:

[CR]

While printing, the following menu will remain on the screen, offering you the options to "PAUSE" or "EXIT."

PRINT REPORT
*PRINTING IN PROGRESS
*P = PAUSE *F7 = EXIT
COMPUTER WORKING PLEASE WAIT ■

Your printer will print two copies of the report we have just created. And if you created it just as directed in this tutorial, it will look like this:

ADVANCED REPORT GENERATOR USER'S MANUAL

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Hardware Store
Test Report
Columnar Report
Four Line Title!

St. #	Item	Pro/Loss
432	shovel	\$ 26.02
1030	sprinkler	\$-100.88
921	rake	\$ 60.02
923	rake	\$ 47.55
121	hoe	\$ 18.32
1243	sprinkler	\$ 46.05
1244	sprinkler	\$ 81.96
1245	sprinkler	\$ 136.77
403	shovel	\$ 89.02
820	rake	\$ 36.76
32	hammer	\$ 51.50
182	garden hose	\$ 94.57
183	garden hose	\$ 83.88
181	garden hose	\$ 64.80
142	hammer	\$ 98.88
185	garden hose	\$ 76.04
435	shovel	\$ 120.27
602	saw	\$ 55.42
706	broom	\$ 34.29
704	broom	\$ 33.45

TOTALS

\$ 1,154.69

When the report has finished being printed, we will be taken back to the main menu, from which we may create a new report, select another previously created report, or even the one we have just used, check our directory, or quit.

Parameters

With our columnar report we did not exhaust the capabilities of the ARG, nor did we extend our report to test the parameters of the columnar format. You will want to keep these parameters in mind, however, as you begin to create your own reports. The following should be kept in mind:

1. When working with a standard 80 column page, remember to account for at least one character between each field, as you calculate how many fields you will put on the report. For instance, if you selected four fields of 20 columns each for the report, you would overrun the report parameters by three characters — the three characters that the program places between the four fields. You could select a maximum of 77 total characters in the four fields you select for reporting. This plus the 3 characters for spacing between the fields would bring you up to the maximum character length of 80. The ARG does not reserve any space for left and right margins. If you desire side margins, select only a few fields for printing, and when they are centered on the page, you will get margins as a result. You may select up to 250 columns for your report, if your printer can print this number of characters on one line.
2. There is no limitation regarding the number of fields you can put on one line. If you are using a wide printer and printer paper, you may work in any number of fields. Even with the wider format, you must meet the conditions outlined in #1 above.

Exiting

Nowhere through this lesson did we mention exiting a certain part of the program. If you exit a program while printing, or as did after we had saved our report, the exit function works in the ARG just as it does in the DBM. It simply takes you back to the main menu, where you may select the next option you need. If, however, you exit a function of the program while you are in the process of creating a report, something more drastic will happen. **ANY TIME YOU PRESS F7 TO EXIT WHILE CREATING A REPORT, THE PROGRAM WILL TAKE YOU TO A**

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MENU EARLIER IN THE PROGRAM, AND WILL ASSUME THAT YOU ARE COMING TO THAT MENU FOR THE FIRST TIME. IT WILL ERASE ALL OF THE THINGS YOU HAVE DONE AFTER FIRST COMING TO THAT MENU. IT WILL ASSUME THAT YOU WILL START THAT PART OF THE PROGRAM OVER AGAIN. There is one exception to this rule. If you exit from a part of the field selection and formatting process, the program will take you back to the field selection menu. The number in the prompt line will indicate how many of the fields you have selected it has retained in the report. If you exit in the middle of creating your fifth field, for example, the number 5 should appear in the prompt line, allowing you to begin in the selection of that field once again.

Summary

We included the following options in this columnar report:

1. Different field formats for each column — fixed decimals, accounting format, text field.
2. A number of options for each field — floating dollar sign, totals, column headings.
3. Larger or smaller margins on top and bottom, and sides, dependent on the page formatting options we selected, and the choice of pagination.
4. A four-line title — up to 80 characters in each line.
5. Identification of values for specific printer and interface combinations.
6. Saved report.

In Lesson Two, we will create and save a FORM REPORT. If you are ready to continue, turn to Lesson Two. We will begin right where you now are at the main menu. If you wish to continue later, select option #4 on the main menu to quit.

Commodore International Historical Society

LESSON TWO – CREATE FORM REPORT

In this lesson we will create and print a Form Report. In some ways creating a Form Report with the ADVANCED REPORT GENERATOR is like creating a form on the DATABASE MANAGER when you first begin to set up a file.

The Form Report of the ARG, however, goes far beyond the form you created with the DBM. And it will give you a much more extensive print-out of a "form" than you were able to print in "form format" with the DBM.

In this lesson we will select the fields of the form we have created for printing, and we will create new "text" fields. We will expand our forty-column form out to eighty columns, and we will produce totals for numeric fields.

Some of the procedures you learned in Lesson One apply equally to Lesson Two. The ARG has been designed to use standard procedures with both kinds of reports. Because it follows set patterns, the ARG is easy and simply to use. If you have not completed Lesson One, please go back and do so.

Setting Up

The creation of a form report requires that we keep track of each field we designate for printing and each new field we create. To create our form report, we must take the information contained on the forty-column screen and expand it out to an eighty-column page. To make things just a bit trickier, we must also create fields to hold the titles we want on our form report. We cannot, as we did when we created our form, simply write out the title on the screen and draw the field after it. We must chart it more carefully, and tell the program where we want to place it. We cannot let fields overlap, or put too many characters on one line. And we want to make sure that the final report we create is pleasing to the eye and easy to use.

In order to keep track of all of this information, we suggest that for each form report you create, you first literally chart the report on paper. Draw out each field, write out each title, place each exactly where you want it.

In Appendix I of this manual you will find a chart of the report we will create in this lesson. We will cover each part of it as we create it for

printing. It has been printed in Appendix I on a separate sheet so that you can take it out of your binder to view as you turn the pages through the tutorial. Please take Appendix I out of your binder now.

Look over the report as it is pictured here. We have assumed that we are all using 8½ x 11 inch paper, with the standard 66 row length and 80 column width. Thus you will find the report charted on an 80 x 66 grid, each square representing one character on the report. We will use the same "saminv" file that we created for use in Lesson One, so you are familiar with the fields and their uses. Notice that there are brackets around each field and around each title. The brackets indicate where we want to designate fields. It may seem stranger that we have put brackets around the titles of the fields. But when we create a form report, we must also designate titles as extra "text fields." For now don't worry too much about this, we will go over it thoroughly as we create our form report in this lesson.

Selecting File and Report

The creation of a form report begins just as does the creation of a columnar report. You are familiar with the starting up procedures, so we can move over this part of the process relatively quickly.

If you picked up this lesson from the end of Lesson One, the main menu should be on the screen of your monitor, and your data disk in the disk drive. If you are coming to this lesson after a break, load the ARG and insert your data disk into the disk drive. The main menu should be on the screen.

The main menu offers you the four basic options of the ARG: **CREATE NEW REPORT**, **SELECT PREVIOUS REPORT**, **DIRECTORY**, and **QUIT**. Select **CREATE NEW REPORT** by pressing 1.

The next column appears, offering you the choice between the creation of a **COLUMNAR REPORT** and a **FORM REPORT**. In this lesson we will create the **FORM REPORT** that is drawn out on the chart you have taken out of the binder from Appendix I and now have before you. Select "**FORM REPORT**" by pressing 2.

Just as before, at this point you will be prompted to enter the name of the database file you wish to use. We will use the sample file we created for this tutorial. Enter the name of the file — **saminv** — and press **return** (**[CR]**).

Again, just as before, a screen will appear offering us the options of using a **SORT INDEX**, **CONDITIONAL STATEMENTS**, or **MATCH FIELD** statements. As before, we will save these options for Lesson Three. For now select **NO MORE SELECTIONS** by pressing **4**.

If all has gone well the field selection screen should appear on your monitor.

CREATE NEW REPORT *SELECT FIELD YOU WISH TO USE *F4 = TEXT FIELD *F6 = CALC FIELD *F1 = PREVIOUS *F5 = SELECT *F3 = NEXT *F7 = EXIT	
SELECT FIELD 1 ■	
SAMPLE INVENTORY	
Date <input type="text"/> / <input type="text"/> / <input type="text"/>	Stock # <input type="text"/>
Item <input type="text"/>	
Item Cost <input type="text"/>	No. Received <input type="text"/>
Total Cost <input type="text"/>	
Rt. Price <input type="text"/>	Number Sold <input type="text"/>
Total Sale <input type="text"/>	
In Stock <input type="text"/>	Profit/Loss <input type="text"/>

At this point we need to decide how we will go about entering the fields we want on our report. We can enter them in any order. For instance, we might want to start at the top of the chart we have drawn and continue down until we get to the end. We would then, again for instance, enter first a text field in order to print the title, then we might select another text field for the title of the "Stock #" data field. Then we would select the "Stock #" field as we have done in Lesson One, and so on. But for our purposes here, as we are learning to create the report, it might be easiest to create them by type, first selecting fields from the form much as we have done on the columnar report, then selecting text fields. This is in fact the procedure we will use here in Lesson Two.

Before we go on we ought to explain what these various kinds of fields do.

1. "Select Field" using F5 — You are familiar with this option as listed on the screen above from all of the reporting that you have done thus far with both the DBM and ARG. When you want a field from your original form printed, you simply move the inverse cursor to it, select it, and the program will print the data contained in that field or each record.

2. "Text Field" using F4 — This option is used only on the FORM REPORT of the ARG. You will notice in the charted page taken from Appendix I that we placed brackets, indicated fields, even around the titles of the fields we want printed on the page. We did this because when we printed titles we must designate them as fields before we can get them to print. We cannot simply draw out our 80-column page report on our 40-column screen, so we must put the titles we want on our report in special "text fields," and ask that the program send these titles out like data to be printed on the report. **WE MAY ADD UP TO FIFTY TOTAL FIELDS, COMBINED FROM TEXT AND CALCULATED FIELDS, TO ANY ONE REPORT.**

3. "Calculated Fields" using F6 — The ARG has the ability to add calculations to our existing file. With this option we can add a field not contained on our original form to either a columnar or form report to gain an added calculation. **AGAIN, WE MAY ADD UP TO FIFTY TOTAL FIELDS, COMBINED FROM TEXT AND CALCULATED FIELDS, TO ANY ONE REPORT.** We are limited, of course, by the number of columns we can fit into the available space in the columnar report. Within this function is another option called "Partial Text" Field. This function is used to place long fields on a form report. We will discuss and practice both Calculated Fields and Partial Text Fields in Lesson Five in the **ADVANCED TUTORIAL.**

We shall proceed in the following way: You can easily see on the chart of our report where we will need to select fields from our form. We will take these first, select them, and tell the program where we want them on the page. To distinguish these fields from "text fields," we will call them "data fields." Next we will take all of the text fields — the titles for the report and data fields — tell the program where we want them placed

on the page, and then what content we want in them. Finally we will review once again the page and printer format information, a little more quickly than we did in Lesson One.

The whole process may seem a little complicated just now, but if you follow along through the lesson, you will find that everything falls into place.

Select Data Fields

We will need to select the following fields from our form for our report: stock number, item, number received, number sold, in stock, and finally the total cost field to put next to the title "Previous Order Cost." Notice once again that the prompt line indicates that we are choosing our first field. This indicator will be especially helpful when creating form reports. You may even want to number the fields on the charts of reports you design, in order to help you keep track of each step you take toward the creation of your form.

Move the inverse cursor to the "Stock #" field, and simply select it as you have always done, using F5. Type:

F5

Just as before, you will be asked for the format of the field. And again we will select **#1, FIXED DECIMAL**. This is a numeric field, and we do not want accounting format, but we also do not want a decimal point, so we will set the decimal at 0. Type: **0 [CR]**. The next screen asks us whether we desire floating dollar sign, totals, or column headings. We cannot use any of these options. We are not using dollar amounts, a total of the various stock numbers would be meaningless, and we are not using columns. Select **NO MORE SELECTIONS**, by type: **4**.

A menu which we have not encountered will appear on the screen:

CREATE NEW REPORT *ENTER ROW/COLUMN INFORMATION: *ROW NUMBER (1-250) *COLUMN NUMBER (1-250)
ENTER ROW NUMBER ■

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For each field we select for printing, whether it is a data field from our original form, or a new text filed for a title, this screen will appear. It will ask first for the row on the page that we want the field placed, as you can see in the prompt line on the screen, and next for the column number of the page where you want it placed.

It works like this. The page, as we have said, has 66 rows counting from top to bottom, and 80 columns counting from side to side. When the program asks for the ROW NUMBER, it is asking how far down on the page we want to place the field we have selected to report. When the program asks for the COLUMN NUMBER, it is asking how far over from the left-hand side of the page we want the field placed. Look once again at our chart, and you will see that we have placed row numbers down the left-hand side from top to bottom, and column numbers across the top from left to right.

On our chart our first data field, the one we have selected, "Stock #," is placed on row 10. Type:

10 [CR]

to indicate that we want the "Stock #" data field on row 10.

Immediately the prompt line of the menu will ask for the column number of the field.

CREATE NEW REPORT *ENTER ROW/COLUMN INFORMATION: *ROW NUMBER (1-250) *COLUMN NUMBER (1-250)
ENTER COLUMN NUMBER ■

We find the column number by looking for the first column or character of row 10 that the field covers. On our chart the "Stock #" data field begins on column 20, so type:

20 [CR]

and the program will ask you whether you have any more fields to select for printing.

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Before we go on to the next field, there is one further thing that ought to be said about the "row" and "column" numbers used on the form report. Notice on the screen that you may enter any number up to 250 for either row or column. With a standard page, as we explained, we are limited to 66 rows and 80 columns. If, however, we were to set our printer in a condensed print mode, then we might be allowed something like 132 columns, and if we have a wide printer and wide paper, we might get 250 columns. The same reasoning applies to page length. If we desire a long report for a special presentation, we are able to designate up to 250 rows on one, single, loooong page.

Let's move on. Your screen should now have a menu on it, asking whether you have any more fields to select for reporting. Type **y**, answering that you do, and the field selection screen will appear.

If we look at our chart, we will see that the next field we want to select is the "Item" field. Move the inverse cursor to this field, and select it using **F5**. We will now be asked how we want to format the field — fixed decimal, accounting, or text — and again we want a text format, so press **3**. Next we must choose whether we want floating dollar sign, totals, or column headings, and like the "Stock #" field, we cannot use any of these options. Choose **NO MORE SELECTIONS**, by pressing **4**.

Now we are back to the **ROW NUMBER** and **COLUMN NUMBER** screen. Again we must refer to our chart. We want to put the "Item" field on same row as the "Stock #" field, so for **ROW NUMBER** type **10 [CR]**. Next the prompt line will ask for the **COLUMN NUMBER**, and our chart says that we want the field to begin on **COLUMN NUMBER 33**. Type **33 [CR]**. And again we will be asked whether we have any further fields to print. Answer yes to this question by pressing **y**, and we will be brought back to the field selection screen, where we will start over again, selecting the next field.

The next three data fields on our chart, those for "No. Received," "No. Sold," and "In Stock" are all to be formatted exactly like the "Stock #" and "Item" fields we have just completed. To save time and type we will let you complete these on your own. Each time you select a field move the inverse cursor to the appropriate field, using the **F1** and **F3** keys, and select it using **F5**. All three of these fields need **FIXED DECIMAL** formatting (with the decimal set at 0) and none of them need floating dollar sign, totals, or column headings. The **ROW** and **COLUMN NUMBERS** are listed below, just as they are arranged on the chart.

"No. Received" data field: ROW NUMBER 15, COLUMN NUMBER 30

"No. Sold" data field: ROW NUMBER 18, COLUMN NUMBER 30

"In Stock" data field: ROW NUMBER 21, COLUMN NUMBER 30

When you have completed selecting these three fields, answer yes to the question asking whether you request any further fields. We should be back at the field selection menu.

We have one further field to select from our form. Move the cursor to the "Total Cost" field with the F1 key. Select it using F5. Since with this field we are working with dollar amounts, we will use ACCOUNTING FORMAT as offered on the next screen. Press 2. We used this format often when we created our columnar report.

The next screen will appear, offering again the choice of floating dollar sign, totals and column headings. Because we are not creating a columnar report, we cannot use option #3, column heading. But even in the form report we can use floating dollar sign, and totals. First select FLOATING DOLLAR SIGN by pressing 1. This option will put a dollar sign before the amount listed in this field on each page of our report. When you press 1, the screen will appear announcing FLOATING DOLLAR SIGN ENABLED. Next press return ([CR]) and we can go on to the next option.

Now select TOTALS ON THIS FIELD by pressing 2. Again, as before with the column report we created in Lesson One, a screen will appear announcing TOTALS WILL BE MADE ON THIS FIELD. You may be wondering where these totals will show up. After all, we do not have long columns at the bottom of which a total can be placed, as we did with the columnar report. Instead an extra page of the report will be printed after the whole file has been printed. This extra page will include data only in the fields we have selected for totals. And at the top of the page "Totals" will be printed to distinguish it from the rest of the report pages.

Once we have selected totals, we do not have any more options left on the screen asking for floating dollar signs, totals, column headings. Select NO MORE SELECTIONS by pressing 4. Enter the following ROW and COLUMN NUMBERS for this field, ROW NUMBER 30, COLUMN NUMBER 45.

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The screen asking whether you wish to print any more fields will appear. Press **y**, and we are ready to move on to select an option we have not yet used: "Text Field."

The following chart pictures all of the fields we have told the program to put on our form report. Notice that none of the fields we have selected has a name or title next to it, as they do in our original form. We must, as we have said above, develop these through the creation of "Text Fields" in the next section. Compare the chart from Appendix I with this chart, and you will see what we have done.

COLUMN NUMBERS		1	10	20	30	40	50	60	70	80
R	1									
O										
W	5									
N				20	33					
U	10		[]		[]					
M										
B					30					
E	15			[]						
R	18			[]						
S					[]					
	21				[]					
	25									
							45			
	30						[]			
	35									
	40									
	45									
	50									
	55									
	60									
	66									

Select Text Field

The first text field we want to add to our report is the title at the top which reads "Reorder Information" on your chart. Since we cannot move the inverse cursor to a field on the screen to select this field, simply select that you want a **TEXT FIELD** by pressing **F4**. Notice once again that this option is listed in the menu of the field selection screen. **F4** is entered by holding down the "Shift" key and pressing **F3**. Type:

F4

The following screen will appear:

CREATE NEW REPORT *ENTER TEXT FIELD *MAX = 80 CHARACTERS
ENTER TEXT ■

We have told the program that we want a text field — we have selected the field — now we must put the data, the text we want, in it. We will type in the "text" of the text field in the same way that we typed in the title of our columnar report. There is only one limitation. We can only put our text field on a single line, limited to 80 characters. Type the title of our report just as it appears on our chart. The cursor is blinking in the text area of the screen type:

Reorder Information

Before you press return to enter the data the screen should look like this.

CREATE NEW REPORT *ENTER TEXT FIELD *MAX = 80 CHARACTERS
ENTER TEXT
Reorder Information ■

Now press: [CR]

and the following screen will appear, which you are familiar with from the first part of this lesson.

CREATE NEW REPORT *ENTER ROW/COLUMN INFORMATION: *ROW NUMBER (0-250) *COLUMN NUMBER (0-250)
ENTER ROW NUMBER ■

This part of the selection process works in exactly the same way for text fields as it did for the data fields we created earlier. The row number tells the program how far down the page to place the field and the column number tells it how far from the left side of the page to place the field. We are still able to enter up to 250 characters for either row or column numbers.

SCENARIO: By now it should be clear that it is necessary to keep extremely clear track of where you want to place each field on the page. For instance, imagine that you are creating a form report, and you have not put it down on paper first. You have entered in all of your data fields, where you think you want them. On the third line, at the fiftieth column, you put a data field which gives you a date from your form. Now you are entering in the title of your page report. You select text field, and the menu comes up asking you to type in the text. You type in the following title: "This Report Was Not Drawn Out First." You know you have got us here — why take the extra time to draw out your report? Besides, you have a computer to do that for you; we've gone beyond the time consuming pencil and paper! Then the program asks you for row and column number. You want the title on row three just to the left of the date. You enter 3 for row number. Now you get confused — you can't remember how far over you put the date. Was at 50? at 60? at 70? You would count out the number of characters in your title, but its no longer on the screen. All you see is an obnoxious screen, asking you for a column number. And you cannot write out the title because you did not bring an outdated pencil and paper to your modern computer — or was it because you can't find a note pad among all the computer paraphernalia, or that your pencil rolled under the monitor. You think there are somewhere around 30 characters in your title. And you decide you want the title centered. 40 characters is the center of the page. You start the field at column number 25, subtracting half of 30 from 40 to center the field. You think you have it made, but your title is 35 characters long, and even if it were only 30 it would still extend to the 55th character, and you put the date field at 50. That's enough of a scenario for now. I don't have the time in my busy schedule to find out what will happen — do you?

The screen asking for a ROW NUMBER is still on your screen, consult your chart, and enter

5 [CR]

The screen will now prompt you for a COLUMN NUMBER. Again consult your chart, and enter

31 [CR]

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We have completed our first entry of a "Text Field." We asked for a text field which did not exist on our database form, we filled it with a text, and we placed it at the appropriate row and column on our report.

The menu on your screen should now be asking whether you have any more fields to print. Type:

Y

and we will be brought to the field selection menu. We will do one more text field together, and then leave the rest for you to do on your own.

Again we cannot move the inverse cursor to the field we desire to print because the field does not yet exist. Select **TEXT FIELD** by pressing **F4**. A menu will appear on the screen instructing us to **ENTER TEXT FIELD BELOW**. It will also remind us that we may put a maximum of 80 characters in our text field. We should remember also that we are limited to one line for each text field.

The cursor is now blinking in the text area of the screen. Consult your chart and you will find that the next field we want to enter is the title for our "Stock #" field. Type:

Stock # [CR]

Again we will be asked for **ROW NUMBER**. Consult your chart once more. We want to place the title, Stock #, just before the stock number data field. We set the data field on row 10, so enter for row number:

10 [CR]

We entered our "Stock #" data field on column number 20. We want to leave a couple of spaces between the title, or text field, and the data field, and the text field is 5 characters long. Enter, then, for **COLUMN NUMBER**:

13 [CR]

just as shown on the chart.

NOTE: If we desire to put a text on our form report that covers more than one line, or perhaps a block of text a few lines long on one side of the page, we must designate each line a separate text field. Write out the block of text exactly as you desire it printed on the page, and you will see exactly which part should go on each line in an individual "text field."

The screen is again asking us whether we have any further fields to print. You will see on the chart that we have five more text fields to create: the title for our "Item" data field, and the titles "No. Received," "No. Sold," "In Stock," and finally "Previous Order Cost." We will let you take these on your own. The process is exactly the same for each one. First, select F4, text field, from the field selection screen. Second, type in the text that you want printed. Last, consult your chart and enter the row and column number. A simple process!

When you have completed the entry of all the text fields, you will have created a form report just as it appears on your chart. I will, of course, sit and wait until you are done. Then we will move on to a review of the final steps for creating a form report.

When you have finished creating the last text field, you will be asked whether you have further fields to print. Answer no to this question. From this point on we will give the final miscellaneous information the program needs to set up the report.

Page and Printer Formatting

In this section, just as we did in the final section of Lesson One, we will cover printer and page formatting for our report. Some of the screens in this section of the program for form reports are different from those in the columnar report printing and page formatting section. Those screens, and the questions and answers on them, that are the same as those in the previous lesson, we will be able to review quickly. And we will ask that if you need to review more thoroughly, you turn back to Lesson One and do so. We will cover completely the new menus, questions, and commands. But be of good cheer, the new screens you will find here are actually simplified versions of those you worked with in Lesson One.

We have just answered no to the question asking if we have further fields to print. Now a menu should be on the screen, asking if we desire more than one copy of the report. As we noted in Lesson One, we can request up to 250 copies of each page. If we were to answer yes to this question, indicating that we do want more than one copy per page, a further screen would appear, prompting us to enter in the number of copies we desire. This screen is shown in Lesson One. If you would like to review it, turn back now and do so. For now, answer no to this question — we do not want more than one copy of each page of this report. Type: **n**.

Next a menu will appear, asking if we desire to change the printer information listed on the screen. The default values are listed on the screen, as they were on the screens in Lesson One. This menu, however, is different from any screen we worked with in Lesson One.

When we created our columnar report we were given two menus on which we had to answer a series of questions to set up the page and printer information for our report. On the first we were asked to enter page information, like whether we wanted pagination, and the size of the paper we were using. On the second screen we were asked whether we wanted to change any of the "default" values that were set by the program for our printer. These included the "secondary address," and whether we wanted to send an initial printer code. Notice on the screen that all of this information is combined.

CREATE NEW REPORT	
*DO YOU WISH TO CHANGE THE PRINTER AND PAGE INFORMATION LISTED BELOW?	
ENTER (Y) FOR YES OR (N) FOR NO ■	
PRINTER SECONDARY ADDRESS	7
INITIAL PRINTER CODE	NONE
PAPER PAGE LENGTH (IN ROWS)	66
PAPER WIDTH (IN COLUMNS)	80

We have gone over each of these options in Lesson One, so we will just quickly review them. If you need to review them completely turn back to Lesson One and do so.

Printer Secondary Address: This is a code that sets the printer in a specific mode, such as upper and lower case, upper or lower case, or graphics printing. The standard Commodore secondary address is 7, and is listed here as the default value. Your printer and interface manuals will tell you which secondary address you should use with your printer and interface combination.

Initial Printer Code: The ARG allows you to set the printer in an initial print format, such as condensed print, expanded print, letter quality, or bold face, and others depending on your particular printer's capabilities. Later, in Lesson Five, we will use printer commands to apply different printing functions to different parts of a single report. Again your particular printer and interface manuals will supply the commands for these functions.

Page Length and Width: The next two options on this screen were contained in a separate screen when we created our columnar report. There we were also asked whether we wanted pagination. This option is not offered on form reports since each record is printed on its own page. Also when we created our columnar report we had to specify how many columns we wanted to use on the page and on how many rows we wanted data printed. For our form report, however, we do not need to give this information, because we have already told the program where exactly on each page we want each specific field printed. We only need to tell the program what size of paper we will be using. The next two lines give the default values for standard sized printer paper — 66 rows by 80 columns. If we were using a wider printer with wide paper we could tell the program that we were using, for instance, a page with 66 rows and 250 columns. In Lesson Seven we will discuss how to use different page sizes to use the form report option to print specialized reports.

For now we will assume that we are all using standard sized paper with 66 rows and 80 columns, and that we are using the standard Commodore 1525 printer or other properly interfaced printer that emulates the 1525. We will not send an initial printer code at this time, saving this function for Lesson Six. We do not need, therefore, to change these default values as listed on the screen. If you are using another printer configuration, press **y**, and the cursor will jump to the 7 and allow you to enter new values in each of the categories. For now press:

n

Next a screen will appear asking whether we want to save this report. We have the option of using it to print once only, or saving it to use again. Let's save this report so that we can check the directory before we print. Answer yes to this question by typing **y** as you have done so many times with this type of question throughout your use of the DBM and ARG.

We must now give the report a name, just as we did before with our columnar report. Again we are limited to ten characters, and again we want to enter a name that will give us some information about the report we are saving. Let's call our report "frsaminv" to indicate a form report for our "saminv" file. Type **frsaminv** in the prompt line, and enter it by pressing **return** (**CR**), also as we have done so many times before.

ADVANCED REPORT GENERATOR USER'S MANUAL

LESSON TWO

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We are now ready to print — to print or . . . — but before we do, let's exit for just a moment and check our directory. To exit type:

F7

You will be taken back to the main menu, where you will be given the four basic options of the ARG: create new report, select previous report, directory, quite. Select #3 DIRECTORY, by pressing:

3

If you have used a new disk for these lessons, your directory should now read:

```
saminv.dd  
saminv.nr  
saminv.df  
crsaminv.rpt  
frsaminv.rpt
```

The only addition to the directory since we last checked in Lesson One is the form report named "frsaminv" followed by a ".rpt", indicating "report."

Now press **return ([CR])** to continue, and you will be returned to the main menu. From the main menu select #2, **SELECT PREVIOUS REPORT**, by pressing

2

Just as in Lesson One where we tried the **SELECT PREVIOUS REPORT** option, we are now directed to enter the name of the report we wish to use. We may use any report we desire. Let's suppose that we enter the wrong name or the name of a report that we think exists, but does not. Try it. Type:

orsaminv [CR]

A disk error will appear in the prompt line, indicating that you have done something wrong (check your disk drive manual whenever you are given an error to see what kind of grave sin you have committed) and you will be instructed to press return to continue. You will be taken back to the main menu and given another chance. Again select #2, **SELECT PREVIOUS REPORT**, and when prompted enter the proper report name, **frsaminv [CR]**.

Just as in Lesson One when we used **SELECT PREVIOUS REPORT** to go back to our report and print, we are now offered the choices of using a sort index, printing only portion of our report with a conditional statement, or printing a single record with a match field statement. Again, as in Lesson One we will leave these options for Lessons Three and Four. Just as we did earlier select option #4, **NO MORE SELECTIONS** by pressing **4**.

The program will take you automatically to the final menu giving you the option to print or exit — to print. Remember that your report will be printed just as you have saved it. **THE REPORT CANNOT BE MODIFIED ONCE IT HAS BEEN SAVED**. Now let's finally print our report. Type:

[CR]

Once again while the report is printing a menu will appear on your screen offering the choice of exiting the print function.

The final report should look like this:

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Look through the pages of the report. You should find one page for each record of the "saminv" DBM file. Each one should look exactly like the example shown just above. At the end of the file a page entitled "Total" accompanies the pages, holding data, in this case totals, only in those fields for which we requested "Totals."

When the report has finished printing, we will be taken to the main menu, where we once again select one of the four basic options of the ARG.

Parameters

1. On any single report, up to 50 additional fields can be added to those selected from the database form itself. For instance, if 25 "text fields" are selected for the report, 25 "calculated fields" may be added to the report. These 50 additional fields may be added to up to 200 data fields — 200 being the limit of the number of fields that may be created with the DBM. Total field limit on any given form report is, therefore, 250 fields.
2. An individual text field may extend up to 80 characters in length, on one single line. If a block of text is needed on a portion of the report, each line must be entered as a single text field.
3. Fields may not overlap. If they do overlap, all or part of one of the fields or any number of fields involved in the overlap will be lost.
4. A form report may be constructed up to 250 characters wide (that is 250 columns wide), and 250 rows long. The length and width of any form report is dependent upon the size of the printer and paper used, and the capabilities of the individual printer.

Exiting

As explained at the end of Lesson One, any time F7 is used to exit during the creation of a report, the program will jump back to a previous menu in the program. When any section of the creation process is exited before the form is saved, the program will assume that you are starting over at the menu it takes you to. As an example, think back a few moments to the time when we purposely entered an incorrect report name when we came from the main menu to print. We received a disk error, and were taken back to the main menu. From there we had to start the entire process over again — the program cleared all of the commands we had

entered. If we exited later in the program, and were taken back to the field selection screen, for instance, we would have to begin the field selection process over again at the number indicated in the prompt line.

Summary

In this section we covered the following practices for creating a Form Report.

1. We selected data fields from our database form, and placed them on an 80-column page. We formatted each field to present the data contained in the field in the appropriate way.
2. We created text fields to hold titles for data fields, a title for the report, and miscellaneous comment fields.
3. We reviewed the printer and page formatting procedures, noticing how they were similar to, and different from, those for the Columnar Report. They were almost identical, and can be followed from the menus.
4. We printed our Form Report, essentially duplicating the chart we took out of Appendix I. We found, and unanimously agree, that Form Reports are completed efficiently when they are first written in the form of a chart, so that we know exactly what we are doing at all times.
5. We produced an extra page of the report to produce totals on selected fields.

Note: Remember to replace Appendix I back in your User's Manual.

In Lesson Three we will sort out the sort, conditional and match field functions of the ARG.

LESSON THREE — SORTS, SUBTOTALS, SUMMARY REPORTS

In Lesson Three we will create the third type of report available with the ADVANCED REPORT GENERATOR. The Summary Report is actually a kind of simplified columnar report which uses a sort index to produce a summary of information for certain categories contained in the reported file.

In order to create a Summary Report, we will first have to consider the sorting options of the ARG. Once we have discussed these — they are slightly expanded over the DATABASE MANAGER — we will move on to the summary report.

Here also we begin to make good our promise to pick up that menu and screen we quickly passed over in Lessons One and Two which offers us the use of sorts, conditionals, and match field statements. In this lesson we will limit ourselves to sorts. In Lesson Four we will completely fulfill that promise by considering conditionals and match fields.

Setting Up

Before we begin using a sort index with the ARG, asking for subtotals, or creating a Summary Report, we must first put a sort index on our data disk using the DBM. As we have mentioned several times, the ARG will not create sort indexes or do other data file manipulations. It will take the data as it finds it on the data diskette, and report it. But it will not do the work of the DBM.

To create the sort index we must quit the ARG, if we are continuing on from Lesson Two, and load the DBM. Once the DBM is loaded, select our "saminv" file, and next select SORT RECORDS, #4 on the DBM main menu. Create a sort index on the "Item" field of our form and save it to the disk. You may want to check the directory of your data diskette while you are still in the DBM to make sure the sort index has been stored correctly. You should find the following listings:

```
saminv.dd  
saminv.nr  
saminv.df  
crsaminv.rpt  
frsaminv.rpt  
saminv 4.ix
```

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The sort index is indicated by the "4.ix" following the last listing of the "saminv" file. Notice that the index is listed at "4.ix", while the "Item" field is the fifth field on the form. The directory lists the index at 4 because the operating system itself begins to count with a 0, rather than 1. Thus "0" next to an ".ix" (representing "sort index") means that a sort index is stored for the first field. A "1" next to an ".ix" refers to a sort index for the second field, and so on.

Once you have completed creating a sort index, quit the DBM, and load the ARG, insert your data diskette into the disk drive, and hold at the main menu.

Sorts

Our first task in this lesson will be to exercise ourselves for a few moments with the sort functions of the ARG. The ARG will not create a sort index, but it will use one created by the DBM, and it even expands the functions available with the DBM.

From the main menu select #1, CREATE NEW REPORT. And from the next menu offering the choice of columnar or form report, again select #1, COLUMNAR REPORT. The sort option may be used with either a columnar or form report. For our purposes here it will be more useful to use it with a columnar report, since the summary report function uses a columnar format.

The next screen will prompt you to enter the name of the file you wish to use. As we have done in the previous two lessons, enter the name of our sample file, **saminv [CR]**. The following screen will appear once the program has loaded the file:

SELECT REPORT OPTION

- 1) USE SORT INDEX
- 2) USE CONDITIONAL STATEMENT
- 3) USE MATCH FIELD
- 4) NO MORE SELECTIONS

ENTER THE NUMBER OF THE COMMAND ■

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As we said, we will limit ourselves in this lesson to the sort function of this menu. We are doing this for two reasons, both of which we must understand. First, as noted above, we want to spend this lesson creating a summary report, and this function naturally goes along with the sort function, as we will soon see. Second — and this is extremely important to remember — the sort function is used in a different way than either the conditional or match field statement.

Remember that after we created our reports in both Lessons One and Two, we went back to check the directory before printing. After we did this, we returned to the main menu, selected #2, SELECT PREVIOUS REPORT. When we did this, our sort-conditional-match menu came onto the screen and we quickly skipped over it. If we had not skipped over it and had tried to use options on it, we would have found out the difference between the sort function and the conditional and match functions. Here is the difference.

If we had selected USE SORT INDEX, option #1 on this menu, when we returned to either our columnar or form report, a screen would have appeared saying OPTION NOT AVAILABLE. This screen would have appeared because the SORT OPTION IS SAVED BY THE PROGRAM ALONG WITH THE REPORT ITSELF. IT CANNOT BE CHANGED AFTER THE REPORT IS SAVED. IF YOU HAVE INCLUDED A SORT OPTION WITH A REPORT AND SAVED THAT REPORT, THE REPORT WILL ALWAYS BE PRINTED IN SORTED ORDER.

If, on the other hand, we had selected USE CONDITIONAL STATEMENT or USE MATCH FIELD, options #2 and #3 on this menu, the program would have allowed us to enter one of these statements. Suppose, for instance, that we had saved a form report in sorted order to be used for invoicing. And for invoicing we only want to print a single record at a time. We could select the report we had saved, and then, with either a conditional or match statement, print an individual invoice.

To summarize the difference between the sort function and conditional and match functions: the sort function is saved with the report — it cannot be changed once the report has been saved; the conditional and match functions are independent of the saved report — they can be changed with each new printing of the report. This is all we will say now about conditional and match field statements in this lesson. It is enough that we see the logic behind the difference between the options on this menu. Now let's move on to the use of the sort function.

From the menu shown above and on your screen, select #1, USE SORT INDEX. Type:

1

The following menu is now on your monitor. It looks almost exactly like the screen we have used to select fields for printing. Look closely at the menu and notice that we are not given the choice of fields for reporting, but for selecting the sort index we created when we set up for this lesson.

CREATE NEW REPORT	
*SELECT THE FIELD OF THE SORT INDEX YOU WISH TO USE	
*F1 = PREVIOUS	*F5 = SELECT
*F3 = NEXT	*F7 = EXIT
SELECT FIELD ■	
SAMPLE INVENTORY	
Date ■/■/■	Stock # _____
Item _____	
Item Cost _____	No. Received _____
Total Cost _____	
Rt. Price _____	Number Sold _____
Total Sale _____	
In Stock _____	Profit/Loss _____

Now, move the inverse cursor to the Item field, on which we have sorted, and select that sort by typing **F5**. The following screen will appear:

CREATE NEW REPORT
*FILE LISTED IN:
1) ASCENDING ORDER
2) DESCENDING ORDER
ENTER THE NUMBER OF THE COMMAND ■

Here the ARG goes beyond the capabilities of the DBM. When we sorted with the DBM, we were automatically given a sort index in ascending order. Each sort index we used listed the records of the file starting with the lowest first moving to the greatest. If we sorted on a numerical field we were given 0 first and 100 later. If we sorted on an alphabetical field we were given A first and Z last.

Ascending Sorted Order

Numerical 1 to 100
Alphabetical A to Z

With ARG we can ask the program to take the sorted list by the tail and give it to us in descending order. It will then give us the greatest numerical or alphabetical value first and move then to the lower.

Descending Sorted Order

Numerical 100 to 1
Alphabetical Z to A

Just to do something we have not yet done, select #2, DESCENDING ORDER. Type:

2

We have now completed using the Sort functions of the ARG. There are three things to remember: 1) The sort function on a particular report cannot be changed once it is set; 2) We can use the sort index in either ascending or descending order; 3) We cannot create a sort index with the ARG, it must be previously created and stored on the data disk with the DBM.

Subtotals

Continuing on, the following screen appeared on your screen when you selected the sort on the item field in descending order. The same screen would have appeared if we had chosen ascending order.

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CREATE NEW REPORT
*DO YOU WISH TO HAVE SUBTOTALS BASED ON THIS FIELD?
ENTER (Y) FOR YES OR (N) FOR NO ■

We need to look closely at this screen for a moment. It might be asking us a couple of different things. It might be asking us if we want subtotals on the pieces of data held in this field. For instance, in our "saminv" file, we have several records in which this item field holds the item name "shovel." It might be asking, then, to subtotal the number of records that have the name "shovel" in the item field. But this is a relatively useless function since the important data regarding the number of shovels we have in our hardware store at this time is listed at the bottom of our database form in the "In Stock" field. In fact the question on this screen means something different, which we should not confuse with this first instance.

Notice that the screen asks if we want subtotals **BASED** on this field. What **IS** this question asking? It is asking if after each set of like items in this field we would like subtotals for selected fields. For instance, it is asking if after it lists all of the shovels, we then want it to put a line in our columnar report that says "subtotal" and then across the page list subtotals for those fields in our report for which we want a total. This is rather complicated — let's see how it works.

Type:

y

answering that we do want subtotal **BASED** on this field.

A menu will appear on the screen asking whether we would like a **SUMMARY REPORT**. For a few moments disregard this screen. Answer no by typing:

n

We are now returned to the screen asking whether we would like to use a sort index, or conditional or match statements. We have already selected our sort index, and we are saving the other two for the next lesson. Choose #4, NO MORE SELECTIONS: Type:

4

The program now moves us to the field selection screen asking us to choose fields for our columnar report. You are familiar with this process, so go ahead and do it on your own.

Create a report with three fields: the Item field, the In Stock field, and the Profit/Loss field.

For the Item field choose text formatting, and put a column heading on it called "Item."

For the In Stock field choose "fixed decimal" formatting with 0 digits to the right of the decimal. This will allow us to put totals on this field. Put totals on the field, and a column heading that says "InSt."

For the Profit/Loss field choose "accounting format," totals, and a column heading that says "P/L."

Next set the page formatting exactly as you did in the previous two lessons. If you need to review these functions go back to Lesson One and do so now. Otherwise, use the menus to guide yourself through the process. Using the default values will speed up the process for you.

The next menu will ask if you desire a heading for the report. Since this is just a practice, answer no — we will skip it this time.

Next you will have to give the program the proper information for your printer. Again if you need to review this, go back to Lesson One and do so now. If you are using the standard Commodore 1525 printer or a properly interfaced parallel printer, using the default values will speed up the process.

You will be asked if you want to save this report. Just so we can go back to it, save it with the name "subrep."

We are now ready to print. Do so now. The report will look like this:

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Item	InSt	P/L
sprinkler		
sprinkler	7	136.77
sprinkler	36	81.96
sprinkler	55	46.05
sprinkler	8	-100.88
SUBTOTAL		
	106	163.90
broom		
broom	5	33.45
broom	9	34.29
SUBTOTAL		
	14	67.74
TOTALS		
	166	1,154.69

You can see clearly here the kind of uses the subtotal function has. For instance, you have ready information about how many pieces you have instock for each item, and how much profit you made, or loss you took under each item and you can compare it to the total for the whole file.

Summary Report

In the Subtotal section of this lesson we created a columnar report that contained subtotals. In this last section of Lesson Three we will create a SUMMARY REPORT, for which we will need to use the sort and subtotal functions.

In order to do this we need to begin again at the main menu to which you should return after printing the report listed above. We will need to repeat some of the same steps we have followed in this lesson. These steps are listed briefly on the following page. If you would like to go through them more slowly once again, go back to the "SORT" section of this lesson and follow it through. When you finish the "SORT" section, jump over the "SUBTOTAL" section and you will be ready to pick up this section once again.

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If you do not need to follow through the sort section of this lesson, complete the following few steps:

1. From the main menu select #1, **CREATE NEW REPORT**.
2. On the next menu again select #1, **COLUMNAR REPORT**.
3. Next enter our database file name as prompted.
4. Select #1, **USE SORT FILE**.
5. Move the inverse cursor to the Item field and select our sort index.
6. Select #2, **DESCENDING ORDER**.

Whether you have gone through the six steps listed just above, or have returned to the "Sort" section of this lesson and have followed the instructions there, you should now have this menu on your monitor:

CREATE NEW REPORT
*DO YOU WISH TO HAVE SUBTOTALS BASED ON THIS FIELD?
ENTER (Y) FOR YES OR (N) FOR NO ■

Answer this question with a yes, and we will expand on what we have done with subtotals in the previous section. Type:

Y

This screen will appear:

CREATE NEW REPORT
*WOULD YOU LIKE A SUMMARY REPORT?
ENTER (Y) FOR YES OR (N) FOR NO ■

Answer yes to this question also by typing:

Y

and you will be returned to the Sort-Conditional-Match menu. You have just put the summary report function into action. What have you done?

By asking for a **SUMMARY REPORT** we have told the computer to make a special kind of report. We initiated the process by asking for a sort. Just as when we created subtotals, we need the sort in order to bring all like records together. Next we need subtotals to give us a subtotal for each type of record. Finally we ask for the summary. This tells the program to leave off all of the particular data from each record and simply give us a "summary" of each type of item in the item field.

Look for example at the report we printed when we used subtotals. Notice that there are eight different types of items: sprinklers, shovels, saws, rakes, hoes, hammers, garden hoses, and brooms. Our summary report will print in the same descending order, but it will only list sprinkler, for instance, once. It will then leave off the data for each of the specific sprinkler records and give us a subtotal for the "Inst" and "P/L" columns as well as totals at the bottom. As the name says it "summarizes" the report so that we just see the file in general. Once again, this will become clearer as we continue to create our summary report.

As you have been reading this, we were left waiting on the sort-conditional-match field menu. We are now done with this section of the program, so select #4, **NO MORE SELECTIONS**. Type: 4. We will be moved to the field selection screen.

Although the **SUMMARY REPORT** uses a columnar type format, we do not choose fields to select in exactly the same way as we did in Lesson One when we created a columnar report. For instance, we do not need to choose the "Item" field because the summary report command will tell the program to print the name of each type of item in the field on which the sort index is **BASED**. Similarly, we do not need to choose the stock number field, since the summary report will not give us information for each particular record. **TO CREATE A SUMMARY REPORT WE ONLY NEED TO CHOOSE THOSE FIELDS FOR WHICH WE NEED SUB-TOTALS OR TOTALS.**

Let's create a simple summary report. Select three fields for printing: the total cost field, the total sale field, and the profit/loss field. For each field select accounting format, totals, and column heading. Put your own appropriate column heading over each column. Remember that the heading cannot be longer than the field length.

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Next enter the appropriate page formatting information. Again if you are using standard sized paper, you can use the default values. If you choose to, put a heading on the report itself. Something like "Sample Summary Report" will distinguish it from the other reports we have produced. Next send the appropriate printer information for your particular printer and interface combination. Save the report with the name "sumsam." And print.

The report should look something like this:

Sample Summary Report		
T/Cost	T/Sale	P/L
sprinkler		
SUBTOTAL		
671.12	635.02	163.90
shovel		
SUBTOTAL		
673.72	909.03	235.31
saw		
SUBTOTAL		
130.90	186.32	55.42
hammer		
SUBTOTAL		
381.50	531.88	150.38
garden hose		
SUBTOTAL		
686.95	1,006.24	319.29
broom		
SUBTOTAL		
370.80	438.54	67.74
TOTALS		
3,430.99	4,585.68	1,154.69

Notice once again that we do not have specific data from individual records. We have instead categories of "items" BASED on the field which we used for our sort. Next we have subtotals of those fields for which we need summary information. We could also have chosen fields like "Number Sold" or "Number Received," formatted them for fixed decimal, with 0 digits to the right of the dollar sign, and asked for totals on them. We would then have seen on our report, for instance, how many total shovels, or sprinkler we received and sold. Of course, we could also have worked this data into a subtotal on a regular columnar report. Experiment to see just what you can do with your particular data files!

Parameters

The parameters for Summary Reports are the same as those for Columnar Reports. All field length requirements are exactly the same as those for the Columnar Report, as are any limitations regarding the number of fields allowable within the available columns of the page.

Exiting

Exiting also works in the SORT, SUBTOTAL, and SUMMARY REPORT functions of the ARG exactly as it does in both the creation of Columnar and Form Report.

Summary

In this lesson we practiced three distinct yet connected functions.

1. First we considered sorts, and the additional feature beyond the DBM — ascending and descending orders.
2. Next we considered subtotals and how to weave them into our columnar reports.
3. Finally we printed out a specialized columnar report called a Summary Report. We found here that we did not receive data from individual records but a "summary" of data based upon the field from which we drew our sort.

If you are ready to continue, turn to Lesson Four in the **ADVANCED TUTORIAL**, where we will work through conditional and match field statements.

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ADVANCED TUTORIAL

If you have completed all of the lessons of the **BEGINNING TUTORIAL**, you have created each of the basic report options available in the **ADVANCED REPORT GENERATOR**. Here in the **ADVANCED TUTORIAL** we will add to the various options to customize our reports and report functions.

In each of the four lessons of the **ADVANCED TUTORIAL** we will assume that you are familiar with the basic features and procedures of the **ARG**, and that you are ready to continue on to more advanced functions. Occasionally we will go back to the reports we saved in Lessons One and Two. And at other times we will have to create a new report to practice one or two of the options we come upon.

In Lesson Four we will draw up one of our saved reports and practice the various types of conditional and match field statements available for printing sections of our files.

In Lesson Five we will pick up two or more options we left untouched in the **BEGINNING TUTORIAL**. We skipped over one of these each time we created a report, Calculated Fields. And one of them we haven't yet seen because it is hidden with the Calculated Field function. We call this the "Partial Field" function. This allows you to take those long 80 + character fields you have been using on your **DBM** forms, and format them for reports.

In Lesson Six we will go back to one of the commands we have skipped in each of the first three lessons, "Initial Printer Commands." And we will practice designing forms that use a variety of printer commands within one single page.

In Lesson Seven we will top off all of the work we have done by discussing the wide variety of special uses the **ARG** can be put to, from special mailing label formats, to a home checkbook and budget report.

In this section of the Tutorial it is especially important that as we work through the various available options you keep your own special reporting needs in mind. At the end of the **ADVANCED TUTORIAL** you will be ready to combine everything available with the **ARG** to create your own unique reports.

LESSON FOUR CONDITIONAL AND MATCH FIELD STATEMENTS

In this lesson we will cover two functions that you are more or less familiar with from the **DATABASE MANAGER**, Conditional Statements and Match Field Statements. We will assume that you have loaded the ARG, have inserted your data diskette into the disk drive, and are ready to begin.

If you need to review the Conditional functions of the DBM, please go back to Lesson Nine of your *DBM User's Manual* to do so. In this lesson we will use a variety of conditional statements not used in the earlier work you have done with your DBM. You will find something like Match Field statements used in your *DBM User's Manual* in Lesson Three, under the heading "Select/Edit Individual Record."

Conditional Statements

In order to begin we need to select the report we will use to practice the use of **CONDITIONAL STATEMENTS**. You will remember that each time we print a report, whether we are creating it for the first time, or are coming to it through the **SELECT PREVIOUS REPORT** option on the main menu, we can enter in a new conditional statement. As we explained in Lesson Three, **CONDITIONAL STATEMENTS ARE NOT SAVED WITH THE REPORTS THEMSELVES. THEY CAN BE CHANGED WITH EACH NEW PRINTING OF THE REPORT.**

For the first section of this lesson we will use the columnar report we created in Lesson One. This will allow us to use a variety of conditional statements without wasting a lot of paper by printing out our form report — which uses one full page for each record — and it will allow us to see clearly the way conditional statements work. It will put all of the records that meet our "condition" on one page where we can see them clearly.

From the main menu select #2, **SELECT PREVIOUS REPORT**, by pressing 2. As the menu prompts, enter the name of our columnar report: **crsaminv [CR]**. The following screen will appear:

SELECT REPORT OPTIONS 1) USE SORT INDEX 2) USE CONDITIONAL STATEMENT 3) USE MATCH FIELD 4) NO MORE SELECTIONS
ENTER THE NUMBER OF THE COMMAND ■

We have previously used option #1 on this menu, but it is not now available to us. If you wish to test it, press 1, and you will be told "OPTION NOT AVAILABLE." Select option #2, USE CONDITIONAL STATEMENT, and we will proceed — type:

2

The following menu will appear which you are familiar with from the DBM. By selecting option #2 on the previous menu, you have put the conditional statement function of the ARG into action. The menu looks like this:

SELECT REPORT OPTION *ENTER YOUR CONDITIONAL STATEMENT *F1 = PREVIOUS *F5 = SELECT *F3 = NEXT *F7 = EXIT	
■	
SAMPLE INVENTORY	
Date ■/■/■	Stock # _____
Item _____	
Item Cost _____	No. Received _____
Total Cost _____	
Rt. Price _____	Number Sold _____
Total Sale _____	
In Stock _____	Profit/Loss _____

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Notice that in this screen, alone among all of the others we have seen thus far, the prompt line where the cursor is flashing is two lines wide. It is expanded in this way because **WE CAN ENTER A CONDITIONAL STATEMENT UP TO SEVENTY CHARACTERS (70) LONG.**

The menu tells you to select the field you desire to put a conditional statement on, moving the inverse cursor stationed now in the first field with the F1 and F3 keys, and selecting as you have always done with F5. When you select the field it will appear in the prompt line and you will then be able to put a conditional on that field. Move the cursor to the item field and select it by pressing **F5**.

The menu will look like this:

SELECT REPORT OPTION	
*ENTER YOUR CONDITIONAL STATEMENT	
*F1 = PREVIOUS	*F5 = SELECT
*F3 = NEXT	*F7 = EXIT
F\$(5)■	
SAMPLE INVENTORY	
Date ____/____/____	Stock #____
Item _____	
Item Cost _____	No. Received _____
Total Cost _____	
Rt. Price _____	Number Sold _____
Total Sale _____	
In Stock _____	Profit/Loss _____

The field is indicated in the prompt line with F\$(5), the "5" indicating the fifth field on the screen, and the inverse cursor is now in the fifth, "Item," field. The cursor is now blinking, ready to accept your conditional statement.

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I have taken time to describe this process in detail because each time we use a conditional statement with this lesson, and each time you do it on your own, the initial process is exactly the same. From here on we will use a number of conditional statements, and each time we will ask that you complete the process just described and practiced before we print the report according to the condition we set up.

Example #1: The Basic Conditional Statement

The first, basic conditional statement we devise is the most common and simplest of all possible statements. To practice it we need only enter the condition we want met exactly as it is on the field we have selected for our conditional statement.

The condition is set by setting the condition "equal" to the data in the field. You are familiar with this process so we will complete it in one simple step. Type the following command in the prompt line (do not yet press return to enter it):

= "shovel "

Notice the form used here. We have told the program to print those records in the file we have chosen when the item field is equal to "shovel." That is, print all records that have "shovel" printed in the "item" field. Notice also that we left six trailing blanks after the word shovel. We did this to include the whole field in the conditional statement. There are certain times at which you do not need to put in the whole field, but they happen only occasionally on fields and commands of peculiar kinds. The safest procedure is to enter the trailing blanks out to the full length of the field for each basic conditional statement that you use.

When your prompt line looks exactly like the one shown above, press:

[CR]

and the program will take you back to the "SORT-CONDITIONAL-MATCH" menu. You will find that you have no further options left here. The sort option can only be set once, when you create the report. Test this by pressing 1. You will be told "OPTION NOT AVAILABLE." Next select option #4, NO MORE SELECTIONS and we will be brought to the

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final print menu. You may, if you desire, use both a conditional and a match field statement at the same time. We will not go over this here. The combination of conditional and match field statements can be used in specialized searching. We will cover something like this in the next example on "dual conditional" statements.

We have thus far selected a previously created report, and have asked to print it according to the condition we set. We asked it to print only those records that have "shovel" as the only data in the item field. Now print the report as you have done in the previous lessons, and the result will look like this:

Hardware Store Test Report Columnar Format Four Line Title		
St. #	Item	Pro/Loss
432	shovel	\$ 26.02
403	shovel	\$ 89.02
435	shovel	\$ 120.27
TOTALS		\$ 235.31

Example #2: "Greater-than"/"Less-than" and Dual Conditional

The "greater than" and "less than" options of conditional statements offer a wide variety of statements. With these options, we will enter in two separate conditional statements.

Let's suppose that we want to print out a selection of the items in our file, the stock numbers which run from 300 to 799.

From the main menu, once again, move through the steps explained at the beginning of this lesson until you end at the "sort-conditional-match" menu. Select option #2.

We will now be moved to the next menu where we will be offered the chance to enter in our conditional statement. Move the inverse cursor to the "Stock #" field and select, using F5. "F\$(4)" will appear in the prompt line,, and we will then be able to enter in the first half of our conditional. Type the following command — again do not yet press return ([CR]) to enter the command.

) " 299"

SELECT REPORT OPTION *ENTER YOUR CONDITIONAL STATEMENT *F1 = PREVIOUS *F5 = SELECT *F3 = NEXT *F7 = EXIT	
F\$(4) " 299" ■	
SAMPLE INVENTORY Date ____/____/____ Stock # ██████ Item _____ Item Cost _____ No. Received _____ Total Cost _____ Rt. Price _____ Number Sold _____ Total Sale _____ In Stock _____ Profit/Loss _____	

Notice that the inverse cursor now resides in the "Stock #" field, and that this field is now represented by "F\$(4)" in the prompt line. Also check to make sure that you have enclosed the number 299 in quotation marks. These marks tell the program to search for whatever we place between them. We used 299, because we want the numbers from 300 to 799, so we must look first for any numbers greater than 299. We left a blank preceding the number, because like our previous basic conditional, we must include the whole field between the quotation marks. But unlike the previous example, the example we are now using is on a numerical field, and numerical fields right-justify data in them. If your prompt line does not look exactly like the one pictured above, correct it now. When you have completed any corrections you must make, we will go on.

Now we will do something we haven't yet done with conditional statements. We will add another condition to the one we have already set. Instead of typing return to enter the condition, type:

and

We have just told the computer that we want to set another limit to the condition. Now once again select the "Stock #" field and "F\$(4)" will appear once again in the prompt line. Next to this second "F\$(4)" type the following (again do not press return at this time):

{ " 800"

The menu will look like this:

SELECT REPORT OPTION	
*ENTER YOUR CONDITIONAL STATEMENT	
*F1 = PREVIOUS	*F5 = SELECT
*F3 = NEXT	*F7 = EXIT
F\$(4) " 299"andF\$(4) { " 800" ■	
SAMPLE INVENTORY	
Date ____/____/____	Stock # ■■■■■
Item _____	
Item Cost _____	No. Received _____
Total Cost _____	
Rt. Price _____	Number Sold _____
Total Sale _____	
In Stock _____	Profit/Loss _____

Here we have completed a kind of dual conditional. We have told the program the following: look through the stock numbers in our field and print those records in the file that have a stock number between 299 and 800, that is any number from 300 to 799.

Go ahead now and print the report using the conditional we have typed into the prompt line. First type **return** (**CR**) to enter the statement and then print as the menus direct. You may also want to try the two further examples explained below.

Using the same kind of procedure we can get the program to search on two different fields at once. For instance, we might enter the following conditional to tell the program to search on the "Item" fields for records that contain information on shovels, and to search on the first date field for all shovels listed in December. The conditional statement would look like this:

F\$(5)="shovel "andF\$(1)="12"

We might also combine statements by asking the program to search on a single field for one specific record like shovel "or" another specific record like hammer. It would then print all records that had in their item field either shovel or hammer. You might enter a conditional like this:

F\$(5)="shovel "orf\$(5)="hammer "

Try these and any other combinations you can think of to print the special combination of records you desire. Remember, there is a seventy-character limit on conditional statements.

Example #3: "Left" and "Right" Statements

In the *DBM User's Manual*, Lesson Nine, you used a "mid" statement to tell the program to search for a certain condition in the "middle" of a field. Now let's expand on this and search on the "left" and "right" ends of a field. We will just briefly describe the commands here. You are now familiar with how to enter conditional statements, so we will let you print these on your own if you so desire.

First let's look at the "left" statement. You might want to use this command on an alphabetical field where the data is not right-justified, as it is in numerical fields.

You might try the following conditional statement as an alternative to the basic statement we used earlier:

left\$(f\$(5),6)="shovel"

Here is the rationale behind this command. First it tells the program to look on the left end of the field. The "\$" stands for "string" in computerese, and tells the program to look for a "string" of characters. Next we put in parentheses where we want it to look. After the left parenthesis we select the field, thus we get f\$(5), as we have before when we selected the "Item" field. Then we set this off with a comma, and tell it to look at the first six characters on the left end of that field. We then close the parentheses, set our equal sign, and between quotation marks type the six characters we are looking for, in this case "shovel."

Some may not see this as a great advantage over the basic conditional statement we first used. But with this we do not have to account for the trailing blanks, and we might be able to put it to practical uses. Suppose that we cannot remember the full name in a field, but we can remember the first part of it. Suppose that we have a kind of client record, and the record we are looking for is "American Plastics and Rubber," on the third field. We only know that it is "American" something-or-other. We might enter the following statements:

```
left$(f$(3),8)="American"
```

This would bring up all the records that began with "American," of course, but it would also bring up the record we desire and couldn't remember.

We can use the same kind of statement for the "right" end of the field. This will probably be more useful to you with numeric fields where the number are right-justified. Try the following command with the report we have been using in this lesson. The explanation we gave for the "left" command applies equally for the "right" statement, only we count over from the right end of the field.

```
right$(f$(4),3)="121"
```

This command tells the program to look on the fourth fields (f\$(4)), our "Stock #" field, take the first three characters from the right, and find "121" in those characters. It will print out only record #5, where the stock number is "121."

A combination of conditional statements using "and" or "or" can also be used with "left" and "right" statements, just as they were in the preceding section.

Example #4: Value Statements for Numeric Fields

There is one way to get away without using quotation marks around the characters we want found. That one single way is to turn a "string" of characters into a "value." When we put "shovel" or "121" between quotation marks in a conditional statement, we are telling the program to look for the characters between those marks, in the same sequence that it finds them there. There is one problem with this. Suppose we have a numerical

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field, and in that field we have both negative and positive numbers. If we tell the program to look for "135.50" it will print out both a +135.50 and a -135.50. This can be disastrous if we are using our database to keep track of sales and expenses. To overcome the possibility of confusion we have to tell the program not to look for a "string" of characters that looks like "135.50", but a number that has a "value" of either "+135.50" or "-135.50." To do this, as the name implies, we use a "value" statement.

To illustrate this, enter the following statement just as it appears here as a conditional:

```
val(f$(13)) < 0
```

Let's take a look at this command. First we ask for a "value" by typing "val." We do not put a \$ after it, because we are not looking for a "string" of characters, but for characters that have a numerical "value." Next we enclose in parentheses the field we want to search on. In this case we have chosen our last field, the profit/loss field. Finally we have asked it to print any record that has a negative value, or is "less-than" 0. It will print only our second record, the only negative amount in our file in the "Profit/Loss" field. Notice here also we did not have to put quotation marks around the 0. These are used only when we are looking for specific "groups" or "strings" of characters. Here again we are asking the computer to look for a "value" or "amount." Try it!

Hint: All of the conditional statements used with the ARG may also be used with the DBM. To check to make sure that the conditional you want to use will work, try it out first on the DBM in the Review/Edit section. Then write down the conditional statements that best meet your needs.

Match Field Statements

To illustrate and practice the Match Field function, go back to the main menu of the ARG and set up in the following way:

First select option #2, SELECT PREVIOUS REPORT, and when asked for the name of the report we wish to use, enter the name of our form report, "frsaminv." We will then be brought to the SORT-CONDITIONAL-MATCH menu.

In this section of the lesson we will choose **USE MATCH FIELD**, but before we do, let's take a moment to orient ourselves. We have never used a "match field" statement before, but we have used something similar to it. The "match field" command is almost identical to "select individual record" in the Review/Edit section of the DBM. If you want to review that function of the DBM, turn to Lesson Three of your *DBM User's Manual*.

Now select #3 on the "Sort-Conditional-Match" menu, **USE MATCH FIELD**, by pressing: **3**. The following menu will appear on your screen.

SELECT REPORT OPTION *SELECT THE FIELD TO MATCH BELOW *F1 = PREVIOUS *F5 = SELECT *F3 = NEXT *F7 = EXIT	
SELECT FIELD ■	
SAMPLE INVENTORY Date ■ / _ / _ Stock # _ _ _ _ Item _ _ _ _ _ Item Cost _ _ _ _ No. Received _ _ _ _ Total Cost _ _ _ _ _ Rt. Price _ _ _ _ Number Sold _ _ _ _ Total Sale _ _ _ _ _ In Stock _ _ _ _ Profit/Loss _ _ _ _ _	

Notice once again that this menu and screen is much like other menus and screens we have used so often through these lessons. In fact, the only difference between this and all of the others is the secondary heading: **SELECT THE FIELD TO MATCH BELOW**. The selection process is exactly the same as in all the others — move the inverse cursor with the F1 and F3 keys, and select the field on which you want to find a match with F5.

In our fictional hardware store, we have record of selling only one type of hoe. Apparently our customers have very few weeds, or simply don't care about them. Let's call up that record, and print it so that we can consider whether we want to continue to carry hoes. Move the inverse cursor down to the "Item" field, and select it by pressing **F5**. The following menu and screen will appear:

SELECT REPORT OPTION	
*ENTER THE TEXT THAT YOU WISH TO MATCH BELOW	
ENTER TEXT	
SAMPLE INVENTORY	
Date _/_/_	Stock # _
Item hoe	
Item Cost _	No. Received _
Total Cost _	
Rt. Price _	Number Sold _
Total Sale _	
In Stock _	Profit/Loss _

Notice that now the inverse cursor is blinking in the "Item" field. And the menu is prompting you to enter the text you wish to match. Type the following in the "Item" field (do not yet type return to enter the match):

hoe

Check to make sure that "hoe" is entered correctly into the field, and when it is correct, use the space bar to enter blanks throughout the rest of the field. If there were more than one word in the field, we would not enter blanks, but instead we would match the field exactly as it is stored in the record. This is called, appropriately, an "exact-field" match. The program will now take you back to the "Sort-Conditional-Match" menu, and we are ready to move on. Since we are using a "previously" created

report, we cannot select the SORT option, nor do we need use the CONDITIONAL option (remember the MATCH option puts a type of conditional statement on the report). Select option #4, NO MORE SELECTIONS, by pressing 4.

We will be moved to the final print menu. Go ahead and print the report. It will print a page of our form report only for the single record in our file which has "hoe" in the "Item" field.

There are also two other ways of using the MATCH FIELD option to find records quickly. You are familiar with them from the DBM. In your *User's Manual*, Lesson Three, page 3-9, three types of "matches," or as the DATABASE calls them "select individual" types, are listed. The first is the match we have just completed.

The second and third types use "*"s to locate parts of a text. An "*" placed before a few characters will find those characters anywhere in the field. For example, if you typed in the field *hose, the program would bring up all of our "garden hose" records. The third type places an "*" after a few characters. This tells the program to look on the first characters of the field and find the record that matches. For example, if we typed garden* in the field, it will again bring up all of our "garden hose" records, but it would also bring up "garden weeder" if we had one in our file.

Summary

In this lesson we have covered two of the options that we hastily skipped over in the BEGINNING TUTORIAL. These options — CONDITIONAL STATEMENTS, and MATCH FIELD STATEMENTS — offer reports a variety and flexibility that were unavailable in any of the reporting we have done to this point. They allow us to select special sections of our file for printing, or even single records from a large file. Make sure you test the conditional and match statements you devise for your particular file on the DBM.

Lesson Five will continue our progress through the ADVANCED TUTORIAL with instructions on CALCULATED FIELDS, and PARTIAL TEXT FIELDS.

Commodore International Historical Society

LESSON FIVE — CALCULATED FIELDS, PARTIAL TEXT FIELDS

In this lesson we will pick up two major field selection methods of the ARG. In the first, **CALCULATED FIELDS**, we will add fields to a form report, just as we did with **TEXT FIELDS** in Lesson Two. We will first select **CALCULATED FIELDS**, then enter the equation, format the field, and place it on our 80 column form. You are familiar with most of the features we will use as we create these new fields, so the lesson will go fairly quickly.

Next we will format what we call "**PARTIAL TEXT FIELDS**." This title does not indicate that the field we wish to format is partially a text field, and partially a numeric field. It means that we will take "part" of a long text field, and format and place it on our form report. You should notice that we have not yet worked with a field that is over 80 characters long. You may have used one or more of these on your DBM form. How do we select it for printing on our 80 column page? We will practice this through **PARTIAL TEXT FIELDS** in this lesson.

Calculated Fields

We have touched on calculated fields briefly, and we are familiar with them from our use of the DBM. We know how to set them up — we used them in the form we created for these lessons, and we know that we can add in up to fifty calculated fields to any one report. (This number represents the total number of possible additional fields, to be parceled out between additional calculated and text fields. If you have placed, for instance, twenty text fields in a Form Report, you may put thirty additional calculated fields on the same report.)

To begin this lesson return to the main menu of the ARG, select #1, **CREATE NEW REPORT**, and from the next menu select #2, **FORM REPORT**. Type in the name of our "saminv" file when prompted, and to speed things up, when you come to the "Sort-Conditional-Match" menu, select #4, **NO MORE SELECTIONS**.

We will begin on the field selection menu. For this report we need only illustrate and practice the **CALCULATED FIELD** function. We will not create an extensive form. We will only create two calculated fields, in order to show the uses of the **CALCULATED FIELD** option.

In Appendix 2 you will find a chart of the Form Report we want to create in this lesson. As we did in Lesson Two, take Appendix 2 out of your binder now, so that you have it before you as we create the report.

Notice on the chart that we need to select two fields from our form, and put two titles next to them. Select the "No. Received," and the "Number Sold" fields, and next to them put the titles "Received," and "Sold," respectively. You are familiar with the procedure for doing both of these operations, and the row and line numbers for each of these four fields are listed on the chart. If you need to review the procedures for selecting "data fields" and creating "text fields" review these functions in Lesson Two of the BEGINNING TUTORIAL. When you have selected and created these four fields, we will be ready to continue on to the calculated fields.

The field selection menu should be on your screen:

SELECT NEW REPORT *SELECT FIELD YOU WISH TO USE *F4 = TEXT FIELD F6 = CALC FIELD *F1 = PREVIOUS *F5 = SELECT *F3 = NEXT *F7 = EXIT	
SELECT FIELD 5 ■	
SAMPLE INVENTORY Date <input type="text"/> / <input type="text"/> / <input type="text"/> Stock # <input type="text"/> Item <input type="text"/> Item Cost <input type="text"/> No. Received <input type="text"/> Total Cost <input type="text"/> Rt. Price <input type="text"/> Number Sold <input type="text"/> Total Sale <input type="text"/> In Stock <input type="text"/> Profit/Loss <input type="text"/>	

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Notice that the number "5" in the prompt line indicates that we are choosing our fifth field. We are now ready to select **CALCULATED FIELD**. Choose this option by pressing **F6** (shift, F5). The following menu will appear:

CREATE NEW REPORT
1) CALCULATED FIELD 2) PARTIAL TEXT FIELD
ENTER THE NUMBER OF THE COMMAND ■

This menu offers the choice of **CALCULATED FIELDS**, and **PARTIAL TEXT** fields. We will pick up **PARTIAL TEXT** fields in the last half of this lesson. For now select option #1, **CALCULATED FIELD**, by pressing 1. The following menu will appear:

SELECT NEW REPORT *ENTER YOUR EQUATION (MAX = 50 CHAR) *F1 = PREVIOUS *F5 = SELECT *F3 = NEXT *F7 = EXIT
cf\$(3) =
<p style="text-align: center;">SAMPLE INVENTORY</p> <p>Date ■ / ■ / ■ Stock # _____ Item _____</p> <p>Item Cost _____ No. Received _____ Total Cost _____</p> <p>Rt. Price _____ Number Sold _____ Total Sale _____</p> <p>In Stock _____ Profit/Loss _____</p>

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As we have done before with other menus, we must look at this one closely. Notice that the top of the menu gives us the information we need to select fields to go into an equation. We select fields as we have always done, using F1 and F3 to move the inverse cursor, and F5 to select. The prompt line is now two lines wide to hold our calculation which can expand up to 50 characters. The prompt line lists several characters that indicate the calculated field we will create. Let's look closely at this too.

We are familiar with the "f\$()" part of the series. "f\$" indicates that a field has been selected, and "()" holds the number of the field. Notice that the number between the parentheses is a "3." However, we have not selected the third field on our form. But we have selected the third additional field for our report. We first selected two text fields, and now the third additional field, our first calculated field. Remember that we are allowed up to 50 fields, combined from text and calculated fields, to our report. The number in the prompt reflects the fact that we are creating our third additional field. The "c" preceding the series indicates that we are creating a **CALCULATED FIELD**.

Now let's consult our chart. We want to calculate the percentage of the number received that we sold. Enter the following calculation. First type a left parenthesis, and then select the "Number Sold" field. Next type "*100" and a right parenthesis. Finally type "/" and select the "No. Received" field. The full equation should look just like the one in the following prompt line. If yours does not look like this, correct it now. Remember that you can simply type in each character of the equation separately, rather than typing some, and selecting fields.

```
cf$(3) = (f$(10)*100)/f$(7) ■
```

We have entered in a simple percentage calculation. When your calculation looks like this, press **return (ICR)**, to enter. The following screen will appear, prompting us to give specific formatting information for our calculated field.

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*ENTER THE PERMISSIBLE FIELD LENGTH FOR THIS CALCULATED FIELD (1-250)
ENTER FIELD LENGTH ■

When this menu appears we must calculate how long the field needs to be to hold the new data. Let's establish this field at four characters in length. Type **4 [CR]** to enter the length. Now we are brought to a menu we are familiar with. We must now format the field — fixed decimal, accounting, and text, and on the next menu, dollar sign, totals, or column heading. Set this field for fixed decimal formatting and when asked for the number of digits to the right of the decimal set it at 0. The program will automatically round up any calculation to the decimal digit we set. Because we are working with a percentage in this equation, we need only whole numbers. Complete this section on your own, and when asked for row and column numbers, set them as they are indicated on the chart. When asked if you have further fields to print, answer yes.

Now we will create one more calculated field. For this one, we will ask for a calculation that gives us what a possible "total sale" might have been if we had sold all of the items we ordered. To do this we will multiply the "No. Received" field on our form by the "Retail Price" field. From the field selection menu, where we are now waiting, select once again **CALCULATED FIELD** by pressing **F6**. Next press **1** for **CALCULATED FIELDS**, rather the "Partial Text Field." You will be asked to enter the calculation in the prompt line. Notice that now the series of characters in the prompt line indicates that you are creating your "fourth" additional field. Select the "No. Received" field, type **"*"**, and select the "Rt. Price" field. The calculation should look like this:

cf\$(4) = f\$(7) * f\$(9) ■

When your equation looks like this, press **return ([CR])** to enter it. Again enter the possible field length as prompted. Set the possible character length at 8. This is the size of the calculations of this type on our existing form. Finally format the field, and set the row and column numbers. When asked if you have further fields to print answer yes.

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Now create two additional **TEXT FIELDS** on your own to identify the two calculated fields we have just created. Make sure to consult the chart for this report before you begin typing in numbers! Finally, look down at the bottom of our chart — we have a lone field stationed there. Notice also that as the form we have created stands, we have no way of telling what record or item each page represents. Select our "Item" field to identify each record. You can move this field to another spot on the form, if you like.

When you are finished, print the form report, going through each of the various menus that go along with page and printer formatting. You might want to save the report for future reference, and you might want to print out only a few records in the field by using a conditional statement. You can even shorten the page to save paper. Experiment a little bit, and see what you can do.

The report will look something like this:

shovel	
Number Received	10
Number Sold	8
Percentage Sold	80
Possible Total Sale	144.00

sprinkler	
Number Received	14
Number Sold	6
Percentage Sold	43
Possible Total Sale	396.06

Be sure you replace Appendix 2 back in its appropriate place in this manual.

Parameters

1. The ARG will accept any BASIC calculation, or you can select fields and set up equations just as we have done here. There is a fifty character limit on each individual calculation.
2. The ARG will accept up to 50 additional fields, combined between calculated and text fields.

Partial Text Fields

You have practiced all of the commands that are needed to format a **PARTIAL TEXT FIELD** at one time or another throughout this manual. This command is most useful when you need to select a long field, say over 80 characters, and place it on your form report. If you took a field exactly 80 characters long, for instance, and placed it on a certain row, at column number 1, you would be able to fit the whole field on an 80 column page. And if you are using condensed print, you might even get a longer field on the page. The **PARTIAL TEXT** function will allow us to break up these long fields, and put each part of them on single lines. This will be especially useful for "comment" fields, that is, extended text fields.

To format these fields, we will have to use commands similar to the conditional statements we used in Lesson Four. We will use "left" statements to take the left end of a field, "right" statements to select the right end of a field, and "mid" statements to select the middle of a long field. Once you catch the pattern of these commands, you will not have any trouble selecting your own fields.

In order to practice this function we will create a short form report that looks like the following illustration. Notice that in this lesson we will not actually select a long field. We will simply use one of the fields we have on our "saminv" file and select it with the **PARTIAL TEXT** commands. We will use one "left" statement and one "right" statement, and then we will compare their use to the "mid" statement. Here is the illustration:

COLUMN NUMBERS

	1	10	20	30	40	50	60	70	80
1									
2									
R									
O									
W									
5									
N									
6									
O									
S									
8									
9									
10									

Notice on this illustration that we are working a ten-line page. When you set the page format parameters, make sure you list page length as ten rows. Second, notice that we are selecting only one field, our "Item" field. We will break this field in half, putting the "left" six characters on line four, and the "right" six characters on line six. For your own long fields you will have to be much more careful about how you place them on your fields than we are here. We will discuss some of the various options for placing long fields on a page after we have practiced the various left, right, and mid commands.

To begin, return to the main menu and set up in the following way. Select **CREATE NEW REPORT** on the main menu, and **FORM REPORT** on the second menu. Next enter the name of our "saminv" file, and when it has loaded, select option #4, **NO MORE SELECTIONS**, on the "sort-conditional-match" menu. When you have completed these options, you will arrive at the field selection menu.

From the field selection menu, select **CALCULATED FIELD**, by pressing **F6**. The following menu will appear:

CREATE NEW REPORT
1) CALCULATED FIELD 2) PARTIAL TEXT FIELD
ENTER THE NUMBER OF THE COMMAND ■

We first came across this menu in this very lesson. Now select option #2, **PARTIAL TEXT FIELD**, by pressing **2**. The following menu will appear, giving us the chance to select and define our **PARTIAL TEXT FIELD**:

SELECT NEW REPORT *ENTER YOUR EQUATION (MAX = 50 CHAR) *F1 = PREVIOUS *F5 = SELECT *F3 = NEXT *F7 = EXIT	
cf\$(1) =	
SAMPLE INVENTORY Date <input type="text"/> / <input type="text"/> / <input type="text"/> Stock # <input type="text"/> Item <input type="text"/> Item Cost <input type="text"/> No. Received <input type="text"/> Total Cost <input type="text"/> Rt. Price <input type="text"/> Number Sold <input type="text"/> Total Sale <input type="text"/> In Stock <input type="text"/> Profit/Loss <input type="text"/>	

Notice several things about this menu. First, and most obvious, it is similar to all of the other field selection screens we have used thus far. Second, the same kind of indicator that we found with Calculated Fields is residing in the prompt line. Technically, the ARG reads a **PARTIAL TEXT FIELD** just as it does a Calculated Field. Thus we find in the prompt line "cf\$(1)." "c" indicates "calculated field" and the "(1)" indicates that we are creating our first field on this form.

Let's begin selecting our field. First enter the following characters into the prompt line:

=left\$(

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The "left" command tells the program that we want to print the left end of the field we select, and the "\$" tells it that we are working with a "string" of characters (not a value). The "(" indicates that we are going to begin setting the specific field definition. Now let's go on to define the field.

Move the inverse cursor down to the "Item" field, and select it using **F5**. **f\$(5)** will appear now in the prompt line. Next type: **.6**).

The full prompt line should look like this:

```
cf$(1) = left$(f$(5),6)■
```

We have now defined the "partial" field we want printed. We have said: take the last six characters of the "item" field, and print them. As soon as we press return to enter the definition, we will be moved along by the program to format the partial field for printing. Look closely at the definition in the prompt line just above once again. Check the form — you will use it every time you use a "left" definition.

"Left" PARTIAL TEXT DEFINITION

cf\$(#)=left\$(f\$(#),#)

cf\$(#) = Calculated or Partial Text Field.

"=" = Set the definition equal to.

left\$ = Look on the left end of the field.

(f\$(#),#) = Select field, and set off by a comma the number of characters from the left end of the field to print. The whole of this part of the definition is enclosed in parentheses to set it off as the definition of the part of the field to print.

Now press **return ([CR])** to enter the definition. The following menu will appear. You are familiar with it from our work with calculated fields.

CREATE NEW REPORT
*ENTER THE PERMISSIBLE FIELD LENGTH FOR THIS CALCULATED FIELD (1-250)
ENTER FIELD LENGTH ■

We can enter any number up to 250, for this field we need only enter 6. Type: **6 [CR]**. We are now brought to the two field formatting menus that we have worked with in every lesson of this manual. You will first be asked to designate the field for "fixed decimal," "accounting format," or "text." Of course, choose text field, and then choose the appropriate option from the "dollar sign-total-column heading" menu. None of these are open to you on a form report with text field formatting, so select option #4, **NO MORE SELECTIONS**. Next enter the row and column numbers. Refer to the small chart included a few pages earlier. Finally, when asked if you wish to select any further fields, answer yes.

We have only selected the first six characters of the "Item" field for printing. Now we will go on to select the last six with a "right" **PARTIAL TEXT** definition. Once again, from the field selection menu, select **CALCULATED FIELD**, by pressing **F6**. On the next menu, offering you the choice of "Calculated Field," and "Partial Text Field," select option #2, **PARTIAL TEXT FIELD**. The following menu will appear, requesting that we set our **PARTIAL TEXT** definition:

SELECT NEW REPORT *ENTER YOUR EQUATION (MAX = 50 CHAR) *F1 = PREVIOUS *F5 = SELECT *F3 = NEXT *F7 = EXIT	
cf\$(2) =	
SAMPLE INVENTORY Date ____/____/____ Stock #_____ Item XXXXXXXXXX Item Cost _____ No. Received _____ Total Cost _____ Rt. Price _____ Number Sold _____ Total Sale _____ In Stock _____ Profit/Loss _____	

Notice that now the prompt line reads that we are selecting our second field, and that the inverse cursor is resting in the "Item" field, the field we last selected. Now enter the following **PARTIAL TEXT** definition. We will enter it all in one step. It follows the same pattern as the "left" definition. We will summarize it when we finish.

cf\$(2) = right\$(f\$(5),6)■

"Right" PARTIAL TEXT Definition

cf\$(#)=right\$(f\$(#),#)

cf\$(#) = Calculated or Partial Text Field.

"=" = Set the definition equal to.

right\$ = Look on the right end of the selected field.

(f\$(#),#) = Select field, and set off by a comma the number of characters from the right end of the field to print. The whole of this part of the definition is enclosed in parentheses to set it off as the definition of the part of the field to print.

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Once you have entered this definition correctly, press **return** (**CR**) and you will be prompted to enter the "permissible field length" for this **PARTIAL TEXT FIELD**. Again enter 6, as the permissible length — we set our definition as the right six characters of the "Item" field. Next you will be prompted to format the field. Do so just as we did for the left half of the field.

Now we must set the row and column number for the field. Consult your chart. Notice that we want to put the second half of the "Item" field just below the left half. Of course, this will not make the data significantly easier for us to read. But it will illustrate the use of the **PARTIAL TEXT FIELD**. Consult your chart and enter the row and column numbers for the bottom field. When you are done, enter the titles, "Left" and "Right," if you choose, and print. Remember for the short, sample report that we are making you can set the page length at 10 rows to save paper.

Go ahead and print the report — it will look like the illustration below. Notice that the report prints just those characters on each line that you selected from the form. Thus you will have one record that looks like this:

sprink
ler

PARTIAL TEXT fields will not adjust the data in the field to make sure that words are not broken in the middle at the end of the field. It will not add hyphens to break the word at the appropriate place.

I hope that by now you can see the uses of the **PARTIAL TEXT** option. Just to illustrate its functions a little more clearly, suppose that your **DBM** form looks something like this:

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REVIEW	
*F1 = PREVIOUS	*F2 = DELETE
*F3 = NEXT	
*F5 = EDIT	*F6 = SCROLL DOWN
*F7 = EXIT	*F8 = SCROLL UP
RECORD NUMBER 1 ■	
NAME: _____	
ADDRESS: _____	
CITY: _____	ST: _____ ZIP: _____
COMMENTS: _____	

With the **PARTIAL TEXT** format option we can take the long, 150 character comment field, and put it like this on the 80-column page:

1	10	20	30	40	50	60	70	80
---	----	----	----	----	----	----	----	----

Name: _____

Address: _____

City: _____ St: _____ Zip: _____

Comments: _____

By using the **PARTIAL TEXT** definition, we can effectively take a portion of a field and place it anywhere on a page. Notice, however, that to do the kinds of formatting shown in this example we have to be able to take the middle of a field and place it by itself, apart from characters defined from the left and right ends of the fields. For instance, in the example just above, the second, third and fourth lines cannot be defined from the left or right ends of the original DBM field. A "left" command will take the "left" characters, starting from the end of the field. And a "right" command will take the "right" characters starting from the right end of the field. But for the three middle lines in the example, we need to be able to skip the left and right ends and get to the "middle" characters of the field.

To select these middle characters we use, appropriately, a "middle" command. You are familiar with this command from the "mid" statement we used in both the DBM and ARG for **CONDITIONAL STATEMENTS**. To select the second line of the command field in the above example, we would enter the following command:

```
cf$(2) = mid$(f$(6),31,30)■
```

We will explain this command by summarizing the "mid" **PARTIAL TEXT** definition.

"Mid" **PARTIAL TEXT** Definition

cf\$(#)=mid\$(f\$(#),#,#.)

cf\$(#) = Calculated or Partial Text field.

" = " = Set equal to.

mid\$ = Look in the middle of the field.

(f\$(#),#,#) = Select field, set off by comma the character in the middle of the field that you want to start with, and by another comma how many characters you want taken from the "middle" of this field, for the "partial text" field. In the above example, we start at character 31, and select 30 characters for the field. Thus we will print for the second field in the illustration, the middle of the field, characters 31 through 60. The whole of the definition is enclosed in parentheses as were the left and right statements.

Parameters

1. You may use as many left, right, and mid commands as you like, subject only to the standard 50 additional fields limitation that we have come upon several times in regards to **TEXT FIELDS**, and **CALCULATED FIELDS**.
2. Like **CALCULATED FIELDS**, **PARTIAL TEXT** fields have a limit of 50 characters for each definition.

Summary

In this lesson we have discussed and practiced two additional features of the ARG that allow us to essentially re-format your 40-column form on the 80-column form report. These functions require special planning. You must tell the program how long the additional field will be, and where you want it placed on the page. For **PARTIAL TEXT** fields, you must define what part of a long field you want printed, and then where you want it placed. In Lesson Six we will pick up the last of the optional functions for developing distinctive reports — **PRINTER COMMANDS**.

LESSON SIX — PRINTER COMMANDS

This lesson is undoubtedly the most difficult of all the lessons contained in this manual. Not only do printer commands take special consideration in the planning stage of each report, but they require that you are familiar with the functions available on your particular printer and interface, and how they are manipulated. We will not go soft on this warning — if you desire to use printer commands, you must be able to work them out for your particular hardware combination.

In this lesson we will discuss and practice two different ways of issuing printer commands. The first and easiest way of using a specific printer option is by sending an "Initial Printer Code" to the printer through the printer formatting menus. The second way of sending printer codes is to "imbed" them in a report itself in "Text Fields." To practice these two methods of issuing printer commands, we will need to create a couple of simple reports.

The Conversion Chart

You will find in Appendix 3 of this manual a chart for converting the commands required for specific printers to keys recognized by the Commodore 64 computer. Please take Appendix 3 out of your manual now. Let's take a moment to explain this conversion chart.

If you own a Commodore 1525 Graphics Printer, you will find that the command for switching the printer into "double width" characters is "14" and the command for switching the printer back to "standard width" characters is "15." Now look at your chart. Down the left column of the first side you will find the numbers 14 and 15. Beside them in the next column are the keys on the Commodore 64 keyboard that issue these commands. For command "14" you would press "Control n" and to implement command "15" you would press "Control o." Each of the commands you need to issue for a specific printer function, you will have to convert through this chart. You may want to underline the commands you use frequently for your hardware configuration.

There is one other tricky part to entering printer commands. Most printers and interfaces require a different secondary address for printer commands than the address they require for regular upper and lower case printing. The usual secondary address for standard upper and lower case printing is the default value, 7, given in the printer formatting

menus that we have covered numerous times in this manual. However, for printer commands some interfaces and printers require, for example, a secondary address of 4 or 6. These special secondary addresses for printer commands translate codes that your Commodore computer sends (that only Commodore computers can understand) into standardized codes that printers sold by other printer manufacturers can understand. (For those of you who like to indulge in arcane computer terminology, these secondary addresses translate "Pet ASCII" into "ASCII". "ASCII" means "American Standard Code for Information Interchange" and why Commodore (Pet) should make up its own "American Standard" is beyond me — I guess it's like saying that "Pepsi" is "Coke.")

Because we can only send one secondary address to the printer with the ARG, we will have to do the translating ourselves. Don't worry, this isn't too difficult. (I myself hate with a passion the explanations programmers give for these kinds of procedures, and try my best to ruin their schemes by finding the easiest ways of doing things that sound so difficult when explained to me in foreign languages — if I can do it, you can!) Here is the simplest way to use these printer codes even if we cannot send the extra secondary address:

- 1) For any code requested that is from 1-63, simply look on your chart in Appendix 3 and enter the keys shown there. No translation is necessary for any numbers from 1 through 63.
- 2) For any code from 64 to 95, add 32 to it and enter the keys shown on the chart for the sum. For example, if the requested command is 74, add 32 to 74 which will give you a total of 106. Then look up the number 106 on your conversion chart in Appendix 3, and enter the keys for 106.
- 3) For any code from 96 to 127, subtract 32 and enter the keys shown on the chart for the difference. For example, if the requested command is 120, subtract 32 to 120, to get a result of 88. Then look up command 88 on your conversion chart in Appendix 3, and enter the keys for 88.
- 4) Finally, for code 128 to 255, look on the chart in Appendix 3 and simply enter the key for that number. No translation is necessary for any number from 128 through 255.

Summary

- 1) 1 through 63: Enter the command for the number.
- 2) 64 through 95: Add 32 to the number and enter the command for the new number.
- 3) 96 through 127: Subtract 32 from the number and enter the command for the new number.
- 4) 128 through 255: Enter the command for the number.

One final warning. Because of the variety of printers and interfaces, and printers without interfaces, and any other sort of unmentionable thing, Mirage Concepts cannot guarantee that your hardware combination will work with all or even any of the commands offered as available with your particular printer. Experiment with your own hardware and see what you can develop.

Initial Printer Commands

In this section of this lesson we will send a particular printer code to set the printer in "expanded print." This will make each character on our report double-sized. Because each character will take twice the room on the page that a standard character would, we must be careful not to overrun the parameters of the report. If we were to set the initial code for condensed print, we would get almost twice as many characters on each row of the report, and we could, therefore, expand the parameters of the report. We will use "expanded print" because this is one of the options available with the Commodore 1525 printer.

From the main menu of the ARG construct the following columnar report from our "saminv" file. We can select only up to forty characters, and we have to account for two characters between each field rather than one (even blanks are in an expanded mode). So, select two fields for printing, the "Item" field, and the "Profit/Loss" field. These two fields will account for over half of our available space, and the two blanks between them will bring the total to 24 characters. We could add in one more field, if we wanted to, and if you do, go ahead. Give the "Item" field text formatting and a column heading; give the "Profit/Loss" field accounting format with dollar signs and totals, and, of course, a column heading.

Set the page formatting options at the default values, except for the specification for "PAPER WIDTH (IN COLUMNS)." Set PAPER WIDTH at 40 columns. (If we had used condensed, rather than expanded, print in this example, we would set the PAPER WIDTH, at the appropriate number for condensed print, normally 132 columns.) Give the report the title "EXPANDED" so that we can see how expanded print works. When you come to the following menu, wait and we will work through it together.

CREATE NEW REPORT	
*DO YOU WISH TO CHANGE THE PRINTER INFORMATION BELOW?	
ENTER (Y) FOR YES OR (N) FOR NO ■	
PRINTER SECONDARY ADDRESS	7
INITIAL PRINTER CODE	NONE

To answer the question on this menu, press:

Y

indicating that you do want to change the printer information listed in the text area of the screen. When you press "y" the blinking cursor will jump down to the "7" opposite PRINTER SECONDARY ADDRESS. Set the secondary address at the standard address for upper and lower case printing. For most of us this will remain where it always has been, at the default value, "7." If "7" is the proper secondary address for your printer and interface, simply press return ([CR]), and the cursor will jump down to the "none" opposite INITIAL PRINTER CODE.

Now, if you are using a Commodore 1525 printer, look in your printer manual to find the command for "expanded" or "double width" print (different printer manuals call them by different names). You will find that the command is "14." If you are using a different printer, look in your manual and find the code (or codes) for your printer.

Next consult the conversion chart from Appendix 3 of this manual. Look down the left column and find "14." The combination of keys to press to issue a "14" command is "Control n." (If you are using a different printer with a different code, of course, you must press a different combination of keys.) Now if you are using the 1525 printer, hold down the "control" key and press n.

Do not worry if nothing new shows on your screen. The "none" that was opposite INITIAL PRINTER CODE, will have disappeared from the screen, but a new value will not necessarily take its place. Some codes will require that you press a succession of two or three keys, some of these will show on the screen and some will not. Do not worry about this, the computer has registered them even if they do not show. When you have pressed the right sequence of keys — if you are using the 1525, you only need to press "control n" — press **return** (**CR**) to enter the command. The next menu in the formatting process will appear, asking whether you want to save this report. You are familiar with this menu, and all of the further menus that will appear on the way to printing our report. Go ahead and execute them yourself, and print the report. Your report should look something like this:

LESSON SIX

TUTORIAL

EXPANDED

Item	Pro/Loss
shovel	\$ 26.02
sprinkler	\$-100.88
rake	\$ 60.02
rake	\$ 47.55
hoe	\$ 18.32
sprinkler	\$ 46.05
sprinkler	\$ 81.96
sprinkler	\$ 136.77
shovel	\$ 89.02
rake	\$ 36.76
hammer	\$ 51.50
garden hose	\$ 94.57
garden hose	\$ 83.88
garden hose	\$ 64.80
hammer	\$ 98.88
garden hose	\$ 76.04
shovel	\$ 120.27
saw	\$ 55.42
broom	\$ 34.29
broom	\$ 33.45

TOTALS

\$ 1,154.69

There is one thing more to remember about Initial Printer Codes. Once your printer has been set in a specific mode, it will remain in that mode until you tell it to do otherwise. If you plan to print another report after using one with a specific Initial Printer Code, simply turn off and on the printer to erase the previous code. (There are some printer commands that turn off automatically when the program sends out a return in the text or data to be printed. You will have to consult your printer and interface manuals to determine which commands do this and which do not with your particular hardware.)

We have used "expanded" print in this section, because we wanted to illustrate a function available with the 1525 printer. For columnar reports you might find most useful "correspondence quality" or "condensed print," both of which are available on many printers.

Imbedding Printer Codes Within a Report

Our second option for sending printer codes for a special report is to imbed them within a report. We will offer one example of this method. The same restrictions apply to this option as they did to sending an initial printer command. They must be able to work with your particular printer and interface combination; they must be available on your printer; and you must be able to convert them and plan for them in your report.

In the last half of this lesson, we will use a command not available on the Commodore 1525 printer, but available on many other printers like those made by Epson, Gemini, and Okidata. We will create a columnar report and in the title we will imbed a command for "correspondence quality" or "double strike" print, depending on the name your particular printer gives it. Different printers call these print functions by different names. We will use here the commands for the Okidata 92 printer, which calls this print function "correspondence quality." Follow along through this example and convert the commands for your specific printer.

To begin, from the main menu, select option #1, **CREATE NEW REPORT**, and from the next menu, option #1, **COLUMNAR REPORT**. Enter our "saminv" file name, and use the "sort-conditional-match" menu as you like. When you come to the field selection menu, select any fields you desire. Make sure they will fit on a standard 80 column page. Format them appropriately.

Stop when you come to the following menu, we will continue from here together:

CREATE NEW REPORT
DO YOU WISH TO ENTER A HEADING FOR THE REPORT?
ENTER (Y) FOR YES OR (N) FOR NO ■

Enter **y**, and the menu requesting that we type in the report heading will appear. We will type our heading on the screen. But before we do we must make sure we are ready with the correct commands.

LESSON SIX

TUTORIAL

First look up the command in your printer manual for "correspondence quality" print, depending on the name your printer gives it. For the Oki-data 92 printer the command to turn on correspondence quality is "27,49." And to turn back on the standard "data processing quality" the command is "27,48."

Remember that for commands from 1-63, we do not need to translate "ASCII" commands to "PET ASCII." If the command we are using were "1,65," we would have to make the appropriate addition or subtraction, and look up the new number.

Now look on our conversion chart from Appendix 3. For command code "27" we need only look down the chart for the corresponding key-stroke command. It is "control :". Next look up the keystroke "49." It is "1." This combination will turn on "correspondence quality" print. Now look up the commands to turn it off, or rather to return the printer to "data processing quality" print. The first command is again 27, "control :". And the second command is 48, or "0." Work through the same process for your particular hardware combination.

Now let's go to our report title. The following menu should be waiting on your screen:

CREATE NEW REPORT *ENTER UP TO 4 LINE HEADING BELOW * MAXIMUM LINE LENGTH = 80 CHAR *RETURN = END OF LINE *F5 = END OF HEADING
ENTER TEXT
<div>■</div>

Let's take this step-by-step. First, enter the command to turn on correspondence quality. If you have an Okidata 92 printer, type: **control:** and 1. A "1" will appear on the screen — ignore it. Second, type the following heading in the text area of the screen. Type only what you see here. Do not add any additional characters of any kind yet.

1This is a test of CORRESPONDENCE QUALITY PRINT ■
We will turn it on — ■
And we will turn it off

Third, enter the command to turn off correspondence quality print. For the Okidata 92 type: **control :** and 0. A "0" will show on the screen — ignore it. Fourth, press **return (CR)** to signal the end of the third line of the heading, and last press **F5** to enter the three line heading. We will now be moved on to the last few menus of the printer and page formatting options. Complete these on your own. And print. We will summarize all that we have done, once we have a report to look at and think about. The report will look like this:

This is a test of a CORRESPONDENCE quality heading
 We will turn it on--
 And we will turn it off

St#	Item	Rec	Cost	Sol	Sale
432	shovel	10	\$ 89.90	8	\$ 115.92
1030	sprinkler	14	\$ 270.62	6	\$ 169.74
921	rake	25	\$ 169.75	23	\$ 229.77
923	rake	25	\$ 202.25	20	\$ 249.80
121	hoe	10	\$ 72.00	8	\$ 90.32
1243	sprinkler	150	\$ 133.50	95	\$ 179.55
1244	sprinkler	150	\$ 133.50	114	\$ 215.46
1245	sprinkler	150	\$ 133.50	143	\$ 270.27
403	shovel	18	\$ 278.82	16	\$ 367.84
820	rake	4	\$ 72.00	4	\$ 108.76
32	hammer	20	\$ 144.00	17	\$ 195.50
182	garden hose	35	\$ 157.15	28	\$ 251.72
183	garden hose	25	\$ 142.50	22	\$ 226.38
181	garden hose	30	\$ 218.70	21	\$ 283.50
142	hammer	25	\$ 237.50	22	\$ 336.38
185	garden hose	20	\$ 168.60	16	\$ 244.64
435	shovel	25	\$ 305.00	23	\$ 425.27
602	saw	10	\$ 130.90	8	\$ 186.32
706	broom	30	\$ 154.50	21	\$ 188.79
704	broom	30	\$ 216.30	25	\$ 249.75
TOTALS			3,430.99		4,585.68

Summary of Steps

We need to summarize what exactly we have done. The steps seem complicated, but in practice they are relatively simple to do.

- 1) For any printer command we want imbedded in a text, we must turn it on and off in the field where we want to use it. This can be in a columnar report heading, or column heading, or in a form report text field. If we want to use a specific print function on a number of consecutive fields, we must turn on that function in the first field in the series, and turn it off on the last field in the series. If we turn it on, and forget to turn it off, the printer will remain in that print mode throughout the report.
- 2) Once we decide on the printer function we wish to use, we must look up the commands in our printer manual, and then find the corresponding key command on the conversion chart in Appendix Three of this manual.
- 3) Also, we have to remember to convert "ASCII" commands to "PET ASCII" commands. This is done by adding or subtracting the appropriate amount to receive a new command number. The commands given in your printer manual are "ASCII" commands. Therefore we must add or subtract the appropriate number to them to get the appropriate command for Commodore's own "ASCII." The appropriate numbers to use to translate the commands are listed at the beginning of this lesson.
- 4) We must account for the command we give the printer in our report plans. For instance if we ask for "expanded" print, we have to plan for fewer available characters per line, and if we ask for "condensed" print we can take advantage of a greater number of characters per line.
- 5) We must format our fields for the text only, not for the printer command. For instance, suppose we want to put a text field on a form report at column number 10 in bold print. When we type the text field on the screen we must first enter the appropriate printer command. It will take one or two characters on the screen, then we will type the text itself, and enter another printer command to turn off the bold print. The screen will show that we have entered, for instance, 15

characters. But the program will recognize for printing only those characters which are actually part of the title itself. You need not place the text field on the page to make room for the printer command. If the text you enter says "Name," a four character text field, ignore the extra four characters when you enter the row and column numbers to place the text field on the page. The program will ignore them also. You need only account for the four characters in your text field, "name."

- 6) For the most part, columnar reports will be easiest to use with "Initial Printer Commands." Exceptions to this rule are using "imbedded" commands in the report heading, as we have done in this lesson, and in column heading. Form Reports will readily take a variety of commands in text fields, and can also use "Initial Printer Commands."
- 7) This is a rule for all printer commands — before you being to create a report that you need in a hurry, for which you want to use printer commands — experiment, experiment, experiement!!! Don't be blinded by all of the possibilities to the fact that printer commands take practice, require planning, and may work differently with each individual hardware combination.

Summary

In this lesson we discussed and practiced the most complicated and difficult option on the ARG — PRINTER COMMANDS. To use this option you must be ready to work with your own particular hardware and its available functions, and limitations. In Lesson Seven, we will go on to discuss some of the creative uses the ARG can be put to.

Commodore International Historical Society

LESSON SEVEN — SPECIAL APPLICATIONS

In this final lesson we will discuss various "special applications" of the ADVANCED REPORT GENERATOR. We will not attempt to include all possible applications, or to give thorough instructions for each of the applications we discuss. We have selected the various possibilities listed here because each illustrates a specific kind of use of the basic functions of the ARG. And having completed the tutorial lessons included in this manual, you will see the kinds of processes you will need to consider and execute so that any "special application" you adopt from these discussions, or design on your own, will meet your specific needs.

As you begin to create special reports to meet your own special needs you might want to consider acquiring a couple of tools. First you might think about purchasing a "Computer Printout Ruler," or a "Line Site Program Rule." These can be found at your local office supply store, at reasonable prices, anywhere from \$3.00 to \$10.00. These rulers are clear, and are calibrated with marks to meet the row and column designations of a computer printer. A Computer Printout Ruler with a "1/6" inch calibration will allow you to mark out your "row numbers" on a form report. The same rule will normally have a calibration for "1/10" inch, so that you can mark out 80 columns on an 8½ inch page. You may also want to consider purchasing some graph paper on which to chart your reports. These are all tools that computer programmers use, not when they are programming, but when they are designing special reports!

Special Mailing Labels

In the DBM you are offered as one of the basic print functions of the program a "mailing label" format. This format is limited to a certain size label, and to a certain number of fields on each line. With the ARG, these limits can be *erased*! By using a Form Report, you can create a "mailing label" report to meet the requirements of your own type of label. Consider these options.

First, you can design a form that has a page size the exact size of your label. If your label is four inches by five inches, you can set up page size and printed page parameters to fit your specific label. The page size would extend from the top of one label to the next. The printed page parameter would mark off that section of that page where information could be printed.

Second, you can design the special form format to hold as many fields as you need on each of the different lines. One valuable advantage here is that you can keep on your database form two fields for the addressee's name, a first name and a last name field. Then you can sort by last name, and still have the first name printed first on the label.

Third, some users of the Mirage Concepts DATABASE MANAGER asked that some provision for "key lines" be made in the mailing label format. A "key line" is a special line at the top of the label that may contain account or index numbers for each person on the mailing list, or special mail delivery route numbers that the U.S. Postal Service requires for some special bulk delivery rates. All of these can be set up on a specially designed Form Report. The "delivery route" number or a date field may take special consideration, because it may need to be changed with each special printing of the report (in this case with each special printing of the mailing list). These can be changed throughout the field through use of the DBM's "Replace Field" functions, combined with conditional statements.

Experiment to see what you can do — how you can make your job a little bit easier, and less time consuming.

Double Record Formatting

Some of our customers have asked how they might format a special report so that, for instance, two records sit side by side on a single page. How might you format a special report so that your computer will create a club membership booklet with two large columns for member information, like name, address, phone number, family members' names, etc. You might want the report to look like this:

Name: _____	Name: _____
Address: _____	Address: _____
Phone #: _____	Phone #: _____
Work Place: _____	Work Place: _____
Special Interests: _____	Special Interests: _____

If each half of this sample page were the data from an individual record, how would we get them side by side?

This type of format is possible with the ARG, if you create two separate reports. For the first form report, you would format the page for a forty column width, and a page length long enough to hold only that information that you want on the special format. You would then place each field as you desired it within those constraints. Next you would make a separate form report that was formatted for an 80 column width, but on which the fields were only placed in columns 41-80. You would then run each report on the same sheet of paper, so that you would have two records next to each other on one single page. The first report would print on the left half of the page, and the second on the right half.

Putting the report in a sorted order would require that the file were first sorted, and then every other record designated by a certain key character in a special field. For example, after sorting you might edit each even numbered record so that it had an "a" in a key field, and in each odd record you might edit in a "b." Then using a conditional statement you might print out all "a" records on the left column, and then, with the second, "right-side" report you might print out the "b" records. Since the first record in the sorted file would head the left column, and the second record head the right column, your page would appear in alphabetical order.

Churches and clubs which have been looking for inexpensive yet flexible ways of producing membership booklets, or lists of available materials have been experimenting with these types of formats with the print functions of the DBM, and have found them very successful.

Filling Out Pre-Printed Forms

Database and reporting systems are often used to fill our pre-printed forms. For instance, an insurance agent might want to use his customer database to fill out the basic information of a standard insurance form, or a renewal estimate. Some users of the DBM have already begun using their database systems for calculating and then printing out job estimates or simple billing statements.

If you have a pre-printed form on which you need information that you have contained in your database, you can design a form report to print data in just those areas of the form where it is needed. For this type of application, you may want to purchase one of the programming rulers listed above.

To accomplish this type of task you need only create a form report, that is simply a "blank" version of the pre-printed form. You do not need to include text fields, or page numbering, or headings. You need only design it so that your "name" field on the database, for instance, prints on the "name" line of the pre-printed form. And you would do the same for all of the fields contained in your database record and asked for on the form. The trick here is to line up each field correctly and start each page in the printer at the right point.

When you purchase something from a retail store and you receive a sales receipt that has been pre-printed and yet has been put through a printer to record your purchase, you have received a page that someone has formatted to print with a special report format. If you will think back to when this has happened to you, you will remember that each line of the form may have been filled with a particular item you purchased, and perhaps had a price printed next to it in a special column. The store where you made your purchase merely used a sophisticated database and reporting system to print your receipt.

You can prepare special reports with the ARG to fill out the routine reports and forms that you have until now done by hand or by typewriter, laboriously retyping and rewriting information you have stored in files or index racks. With the DBM and ARG systems, you can design files and reports that can take advantage of the information you have typed only once into your database. By experimenting with report formats to meet your specific needs, you can alleviate some of the routine work that has filled your day.

Home Checkbook and Budget Report

All of the above examples of specialized reports have relied on the Form Report function of the ARG. In this last example we will use the Columnar Report with its special features. Few households keep a written budget for the simple fact, I suspect, and admit, that it takes time to keep track of all the little bills and payments that come up during a month. There may be some personal pain involved for all of us were we really to find out where our money went — approach this last illustration with caution.

With the combination of the DBM and ARG, you can set up your own simple home or small business checkbook and budget report. You might set up a database form like this:

Date: _____ Check #: _____ Budget Category: _____
Description: _____ Amount: _____

From this form you might create a columnar report that contained the following fields: check number, budget category, and amount. By sorting on budget category, and asking for subtotals, and totals on the amount field, you could produce the budget report. For instance, if one of your budget categories were "household" you would find grouped on your report all "household" expenses and a subtotal for that group. And you would find at the bottom of the report a total to compare to all of the subtotaled amounts. By carefully creating the DBM form so that the fields were of efficient lengths, you might even squeeze in the description field, and so know within each subtotal where payments were going.

You might even have a "deposit" category to help balance your checkbook and keep more complete records. You may also want to print your report only for a single month, by placing a conditional statement on the date field. And a print out in form format through the database manager will give you a complete listing of all checks written and deposits made.

Those of you who know accounting procedures will easily see how a simplified general ledger can be constructed with some of the same functions. We should warn that the DBM and ARG are not accounting packages. They will not give you full accounting functions, nor will they provide spreadsheet-like reports.

Summary

Both the DBM and ARG have been designed to provide the utmost flexibility for users of Mirage Concepts products. Most of the illustrations listed in this lesson have come to us through comments from our customers who have put their programs to unique, and sometimes unexpected, uses. In our efforts to remain helpful to our customers after purchasing our programs, we have produced and are producing examples and hints for program uses. Be sure to send in your warranty envelope in order to place your name on our customer mailing list. You will receive notice by mail of our continuing efforts to supply assistance.

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Most of the functions of the ADVANCED REPORT GENERATOR are clearly shown on the program menus and can be followed as you create or use a previously created report. The following lists of functions and procedures will help you keep track of each of the options you must consider and implement as you plan and create a report. Each procedure here is listed in the order presented in the manual. Use these lists in your planning stages, and as a quick reference while creating a report.

CREATE COLUMNAR REPORT:

- 1) **Load:** ARG, insert database data diskette.
- 2) **Menu:** MAIN MENU
Enter: Option #1, CREATE NEW REPORT
- 3) **Menu:** SELECT TYPE OF REPORT
Enter: Option #1, COLUMNAR REPORT
- 4) **Menu:** SELECT FILE
Enter: Database file name, return
- 5) **Menu:** SORT-CONDITIONAL-MATCH FIELD
See: "SORT, SUBTOTAL, SUMMARY REPORT," and "CONDITIONAL, MATCH FIELD" sections below.
- 6) **Menu:** SELECT FIELD
See: "SELECT FIELD" sections below.
- 7) **Menu:** PAGE FORMAT (Default = return)
Enter: 1. Page Numbering (y or n)
2. Paper Page Length (default 66 rows, max = 250)
3. Printed Page Length (default 56 rows, max = 250)
4. Paper Width (default 80 columns, max = 250)
- 8) **Menu:** REPORT HEADING
Enter: y or n
- 9) **Menu:** ENTER REPORT HEADING
Enter: Type heading, return, F5
- 10) **Menu:** PRINTER INFORMATION
Enter: Change y or n
Enter: 1. Secondary Address (default = 7)
2. Initial Printer Code (default = none)
- 11) **Menu:** SAVE REPORT
Enter: y or n

- 12) **Menu:** PRINT REPORT
Enter: Return (or F7 to exit)
- 13) **Menu:** PRINTING IN PROGRESS
Enter: p = pause, F7 = exit

CREATE FORM REPORT

- 1) **Load:** ARG, insert database data diskette
- 2) **Menu:** MAIN MENU
Enter: Option #1, CREATE NEW REPORT
- 3) **Menu:** SELECT TYPE OF REPORT
Enter: Option #2, FORM REPORT
- 4) **Menu:** SELECT FILE
Enter: Database file name, return
- 5) **Menu:** SORT-CONDITIONAL-MATCH FIELD
See: "SORT, SUBTOTAL, SUMMARY REPORT," and "CONDITIONAL, MATCH FIELD" sections below.
- 6) **Menu:** SELECT FIELD
See: "SELECT FIELD" sections below.
- 7) **Menu:** MORE THAN ONE COPY OF REPORT? (2-250 possible)
Enter: y or n
Enter: Number of copies, return
- 8) **Menu:** CHANGE PAGE AND PRINTER INFORMATION?
Enter: y or n
Enter: 1. Printer Secondary Address (default = 7)
2. Initial Printer Code (default = none)
3. Paper Page Length (default = 66 rows, max = 250)
4. Paper Page Width (default = 80 columns, max = 250)
- 9) **Menu:** SAVE REPORT?
Enter: y or n
Enter: Report name, return
- 10) **Menu:** PRINT REPORT
Enter: Return, (or F7 to exit)
- 11) **Menu:** PRINTING IN PROGRESS
Enter: p = pause, F7 = exit

SORT, SUBTOTAL, SUMMARY

A. Sort (Columnar and Form Reports)

- 1) **Menu:** SORT-CONDITIONAL-MATCH FIELD
Enter: Option #1, USE SORT INDEX
- 2) **Menu:** SELECT FIELD OF SORT INDEX
Enter: Move inverse cursor, select with F5.
- 3) **Menu:** FILE IN ASCENDING/DESCENDING ORDER?
Enter: Option #1, or #2

B. Subtotal (Columnar Report Only)

- 4) **See:** Above, "A. Sort", steps 1-3
- 5) **Menu:** SUBTOTALS?
Enter: y or n (if yes, go to SUMMARY REPORT; if no, go to SORT-CONDITIONAL-MATCH FIELD Menu)

C. Summary Report (Columnar Report Only)

- 6) **See:** Above, "B. Subtotal", steps 4-5
- 7) **Menu:** SUMMARY REPORT?
Enter: y or n (Go to SORT-CONDITIONAL-MATCH FIELD menu, proceed with COLUMAR REPORT)

CONDITIONAL STATEMENTS, MATCH FIELD STATEMENTS

A. Conditional Statements

- 1) **Menu:** SORT-CONDITIONAL-MATCH FIELD
Enter: Option #2, USE CONDITIONAL STATEMENT
- 2) **Menu:** ENTER CONDITIONAL STATEMENT
Enter: Enter your conditional statement

B. Match Field Statements

- 1) **Menu:** SORT-CONDITIONAL-MATCH FIELD
Enter: Option #3, USE MATCH FIELD
- 2) **Menu:** SELECT FIELD
Enter: Move cursor with F1 and F3, select with F5.
- 3) **Menu:** ENTER TEXT TO MATCH
Enter: Type text directly into field, extend to end of field, or use ""

SELECT FIELD

A. Select Data Field (Columnar and Form Reports)

- 1) **Menu:** SELECT FIELD
Enter: Move inverse cursor with F1 and F3, select with F5
- 2) **Menu:** Field Formatting Menu #1 NUMBERS LISTED IN (one of the following:)
 - A. **Enter:** #1, FIXED DECIMAL
 1. **Menu:** : ENTER NUMBER OF DECIMAL DIGITS
Enter: Number of digits
 - B. **Enter:** #2, ACCOUNTING FORMAT
 - C. **Enter:** #3, TEXT FIELD — NO NUMBER FORMATTING
- 3) **Menu:** Field Formatting Menu #2: DOLLAR SIGN, TOTALS, COLUMN HEADING (may enter one, any, or all of the following:)
 - A. **Enter:** #1, FLOATING DOLLAR SIGN (NUMERICAL FIELD ONLY)
 1. **Menu:** FLOATING DOLLAR SIGN ENABLED
Enter: Return
 - B. **Enter:** #2, TOTALS ON THIS FIELD (NUMERICAL FIELD ONLY)
 1. **Menu:** TOTALS WILL BE MADE ON THIS FIELD
Enter: Return
 - C. **Enter:** #3, COLUMN HEADING (COLUMNAR REPORT ONLY)
 1. **Menu:** ENTER COLUMN HEADING BELOW
Enter: Return
 - D. **Enter:** #4, NO MORE SELECTIONS
- 4) **Menu:** (FORM REPORT ONLY) ENTER ROW AND COLUMN INFORMATION
Enter: Enter row number, return
Enter: Enter column number, return
- 5) **Menu:** ANY MORE FIELDS TO PRINT OUT?
Enter: y or n

B. Select Text Field (Form Report Only)

- 1) **Menu:** SELECT FIELD
Enter: F4, TEXT FIELD
- 2) **Menu:** ENTER TEXT FIELD BELOW
Enter: Type text, 80 characters/one line limits, return to enter

3) **Menu:** ENTER ROW/COLUMN INFORMATION BELOW

Enter: Enter row number, return

Enter: Enter column number, return

3) **Menu:** ANY MORE FIELDS TO PRINT OUT?

Enter: y or n

C. Select Calculated Field (Columnar and Form Reports)

1) **Menu:** SELECT FIELD

Enter: F6, CALCULATED FIELD

2) **Menu:** CALCULATED OR PARTIAL TEXT FIELD?

Enter: Option #1, CALCULATED FIELD

3) **Menu:** ENTER YOUR EQUATION

Enter: Type in standard BASIC calculation, or select fields using F5. 50 character limit.

4) **Menu:** ENTER PERMISSIBLE FIELD LENGTH

Enter: Number for field (leave room for dollar sign, minus sign, decimal point, commas, if needed)

5) **Menu:** FIELD FORMATTING

See: Above, "A. Select Data Field", steps 2-5

D. Partial Text Field (For Formatting Long Database Fields on Form Reports)

1) **Menu:** SELECT FIELD

Enter: F6, CALCULATED FIELD

2) **Menu:** CALCULATED OR PARTIAL TEXT FIELD?

Enter: Option #2, PARTIAL TEXT FIELD

3) **Menu:** SELECT FIELD

Enter: Move cursor with F1 and F3, select with F5

4) **Menu:** ENTER PARTIAL TEXT DEFINITION

Enter: Type partial text equation, 80 characters/one line limited, return

5) **Menu:** FIELD FORMATTING

See: Above, "A. Select Data Field", steps 2-5

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COLUMN NUMBERS		1	10	20	30	40	50	60	70	80
R O W N U M B E R S	1									
	5				31					
					[Reorder Information]					
	10	13	20	28	33					
		[Stock #]	[_____]	[Item]	[_____]					
	15	16		30						
		[No. Received]		[_____]						
	18		[No. Sold]		[_____]					
	21		[In Stock]		[_____]					
	25									
				22		45				
	30			[Previous Reorder Cost]	[_____]					
	35									
	40									
	45									
	50									
	55									
	60									
	66									

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ADVANCED REPORT GENERATOR USER'S MANUAL

TUTORIAL

APPENDIX TWO

COLUMN NUMBERS

	1	10	20	30	40	50	60	70	80
R	1								
D									
W			20		36				
	5		[Number Received]		[____]				
N	7		[Number Sold]		[____]				
U									
M	10		[Percentage Sold]		[____]				
B			16						
E	12		[Possible Total Sale]		[____]				
R	15								
S									
	20		[____]						
	25								
	30								
	35								
	40								
	45								
	50								
	55								
	60								
	66								

APPENDIX THREE PRINTER COMMAND CONVERSION CHART

PRINTER COMMAND	KEY, KEY COMBINATION	PRINTER COMMAND	KEY, KEY COMBINATION
1	Control a	25	Control y
2	Control b	26	Control z
3	Control c	27	Control : (colon)
4	Control d	28	Control £ (pound)
5	Control e	29	Control ; (semicolon)
6	Control f	30	Control ↑ (up arrow)
7	Control g	31	Control = (equal)
8	Control h	32	Space-bar
9	Control i	33	Shift 1
10	Control j	34	Shift 2
11	Control k	35	Shift 3
12	Control l	36	Shift 4
13	Control m	37	Shift 5
14	Control n	38	Shift 6
15	Control o	39	Shift 7
16	Control p	40	Shift 8
17	Control q	41	Shift 9
18	Control r	42	* (asterisk)
19	Control s	43	+ (plus)
20	Control t	44	, (comma)
21	Control u	45	- (minus)
22	Control v	46	. (period)
23	Control w	47	/ (slash)
24	Control x	48	0 (zero)

ADVANCED REPORT GENERATOR USER'S MANUAL

APPENDIX THREE

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PRINTER COMMAND	KEY, KEY COMBINATION	PRINTER COMMAND	KEY, KEY COMBINATION
49	1	74	j
50	2	75	k
51	3	76	l
52	4	77	m
53	5	78	n
54	6	79	o
55	7	80	p
56	8	81	q
57	9	82	r
58	: (colon)	83	s
60	Shift , (comma)	84	t
61	Shift = (equal)	85	u
62	Shift . (period)	86	v
63	Shift / (slash)	87	w
64	@	88	x
65	a	89	y
66	b	90	z
67	c	91	Shift : (colon)
68	d	92	£ (pound)
69	e	93	Shift ; (semicolon)
70	f	94	↑ (up arrow)
71	g	95	← (left arrow)
72	h	96-127	Not Implemented
73	i	128	Not Implemented

PRINTER KEY, KEY
COMMAND COMBINATION

129	Commodore 1
130	Not Implemented
131	Not Implemented
132	Not Implemented
133	F1
134	F3
135	F5
136	F7
137	F2 (Shift F1)
138	F4 (Shift F3)
139	F6 (Shift F5)
140	F8 (Shift F7)
141	Commodore Return
142	Not Implemented
143	Not Implemented
144	Control 1
145	Commodore Vertical Cursor
146	Control 0
147	Commodore Clear/Home
148	Commodore Inst/Del
149	Commodore 2
150	Commodore 3
151	Commodore 4
152	Commodore 5

PRINTER KEY, KEY
COMMAND COMBINATION

153	Commodore 6
154	Commodore 7
155	Commodore 8
156	Control 5
157	Commodore Horizontal Cursor
158	Control 8
159	Control 4
160	Commodore Space-Bar
161	Commodore k
162	Commodore i
163	Commodore t
164	Commodore @
165	Commodore g
166	Commodore + (plus)
167	Commodore m
168	Commodore £ (pound)
169	Shift £ (pound)
170	Commodore n
171	Commodore o
172	Commodore d
173	Commodore z
174	Commodore s
175	Commodore p
176	Commodore a

PRINTER COMMAND	KEY, KEY COMBINATION
--------------------	-------------------------

177	Commodore e
178	Commodore r
179	Commodore w
180	Commodore h
181	Commodore j
182	Commodore l
183	Commodore y
184	Commodore u
185	Commodore o
186	Shift @
187	Commodore f
188	Commodore c
189	Commodore x
190	Commodore v
191	Commodore b
192	Shift * (asterisk)
193	Shift a (A)
194	Shift b (B)
195	Shift c (C)
196	Shift d (D)
197	Shift e (E)
198	Shift f (F)
199	Shift g (G)
200	Shift h (H)

PRINTER COMMAND	KEY, KEY COMBINATION
--------------------	-------------------------

201	Shift i (I)
202	Shift j (J)
203	Shift k (K)
204	Shift l (L)
205	Shift m (M)
206	Shift n (N)
207	Shift o (O)
208	Shift p (P)
209	Shift q (Q)
210	Shift r (R)
211	Shift s (S)
212	Shift t (T)
213	Shift u (U)
214	Shift V (V)
215	Shift w (W)
216	Shift x (X)
217	Shift y (Y)
218	Shift z (Z)
219	Shift + (plus)
220	Commodore - (minus)
221	Shift - (minus)
222	Shift ↑ (up arrow)
223	Commodore * (asterisk)
224-225	Not Implemented

APPENDIX FOUR — INFORMATION FOR COMMODORE 1526 AND IEEE PRINTERS

If you have an older Commodore 1526 printer, or one of the Commodore IEEE printers such as the 4023, or 8023, you will need to make special preparation before loading the ARG, and printing. These printers were manufactured to print under codes different from either the Commodore 1525 and other properly interfaced parallel printers, and from the newer 1526 printer which now uses 1525 operating codes. You will remember that your DBM offers you two separate options — simple print for most printers, and "1526" for the Commodore 1526, and other IEEE printers. These two options are not available with the ARG, because the 1526 has now been changed to conform to the 1525. Such is the computer hardware industry...

IF YOU HAVE ONE OF THESE EARLIER PRINTERS, YOU MUST ENTER THE FOLLOWING PROGRAMMING CODE BEFORE YOU LOAD THE ARG. This code will set the computer to send the now "out-dated" 1526, and 4023 codes. Before you load the ARG type while in basic:

OPEN7,4,7:PRINT#7:CLOSE7

and press **return** to enter the command.

After doing this you may simply use the ARG without any modification, save one. When you come to either of the printer formatting menus, the one for columnar reports, or the one for form reports, you must enter a special command in the **SECONDARY ADDRESS** line. When asked if you want to change information on either of these screens, answer yes, and enter the following number as your **SECONDARY ADDRESS**:

255.

This is not actually a secondary address. It commands the computer to override and address that the ARG sends, and accept instead the command you entered before you loaded the program, just for your 1526 or IEEE printer.

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MIRAGE CONCEPTS DATA BACKUP

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Your program disk has a special utility program on it with which you can copy your data disk. This program will read from your data disk and copy the information contained there onto another disk to "backup" your data. We suggest that you use it often — every time you change your data disk, by adding, editing, deleting, or rearranging files. It takes approximately 20-25 minutes to complete.

PLEASE READ OVER THE FOLLOWING FEW STEPS COMPLETELY BEFORE BEGINNING THE PROGRAM. When you have completed the backup process you will have two copies of your data: the original and your backup copy.

Step 1: Insert your program diskette into the disk drive and load the backup program. Type: **LOAD"MC BACKUP",8**

When "ready" shows on the screen, type: **RUN**

Step 2: When the program has loaded, the following screen will appear:

MIRAGE SINGLE DISK DRIVE BACKUP *INSERT YOUR BACKUP DISK *WARNING — THIS WILL ERASE AND FORMAT YOUR BACKUP DISK *[RETURN] = READY

PRESS RETURN WHEN READY

As the menu instructs, take your program disk out of the disk drive, insert your backup disk, the one you want the data copied onto, and press **RETURN**. The first function of the backup program will completely erase the backup disk. It will format the disk, and thus start with a fresh disk.

Step 3: As soon as you complete the procedures on the above menu, a new menu will appear on the screen. However, you cannot do what it requests immediately. You must wait until the disk drive completely stops and the red light goes out. When this happens the formatting process has been completed, and you are ready to continue. The menu now on your screen will look like this:

MIRAGE SINGLE DISK DRIVE BACKUP *INSERT YOU ORIGINAL DATA DISK *[RETURN] = READY
--

PRESS RETURN WHEN READY

MIRAGE
CONCEPTS DATA BACKUP

MIRAGE CONCEPTS DATA BACKUP

USER'S
MANUAL

As the menu instructs, take out your backup diskette, insert your original data disk, and press **RETURN**. The program will now read a section of data from your original data disk and store it in the computer's memory.

Step 4: When the computer has finished reading data, the following menu will appear:

MIRAGE SINGLE DISK DRIVE BACKUP
*INSERT YOUR BACKUP DISK *[RETURN] = READY
PRESS RETURN WHEN READY

Now take your original data disk out of the disk drive, insert your backup disk, and press **RETURN**. The program will now take the section of data it read off of your original data disk and write it onto your backup disk. When it has finished, the menu shown in Step 3 above will come onto the screen. You will then repeat the processes described in Steps 3 and 4 seven times, until your entire original data disk has been read and copied over onto your backup disk.

Step 5: When the entire process has been completed, the following menu will arrive on your screen:

MIRAGE SINGLE DISK DRIVE BACKUP
*FINISHED COPYING *REMOVE BACKUP DISK *[RETURN] = QUIT
PRESS RETURN TO QUIT

Your original disk has now been completely copied over to your backup disk. Remove your backup disk from the drive and press **RETURN**. You will be returned to Commodore Basic.

Step 6: To check to make sure your data disk has been copied completely, load the directory of your backup disk to make sure it is complete. You may have to load the directory of your original data disk first in order to compare it to your backup copy. To load a directory type the following command: **LOAD"\$",8 [CR]**. And when "ready," type: **LIST**.

If all has copied correctly, the directories of both disks should be identical.

You will have noticed by now that the menus on this program will guide you through the backup process. If you have trouble, refer back to these instructions. Soon the process for backing up data disk will be second nature for you.

